

The state stem cell agency

President's Report

Alan O. Trounson


ICOC Meeting -- February 2010

Agenda Item #5



The California Stem Cell Initiative: Persuasion, Politics and Public Science

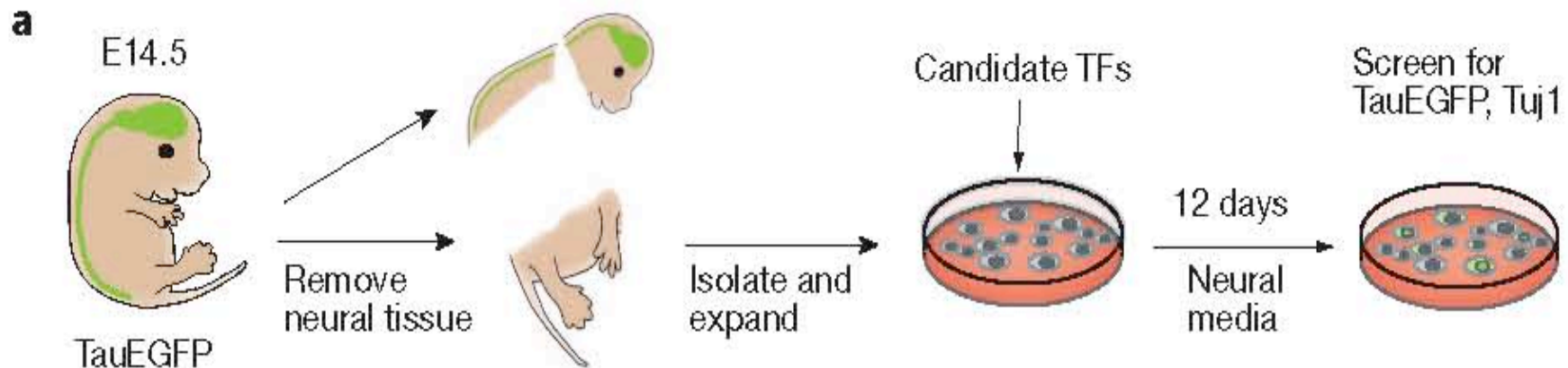
J W Adelson & J K Weinberg, *APHA* Jan 2010

- “The shift of a major focus for stem cell research to California will have a significant effect into the future on the geographic distribution of biological science and biotechnology infrastructure in the United States; on the location of university, biotechnology, and pharmaceutical research and start up firms; and on the investment of venture capital. Evidence for this is the \$300 million the CIRM has invested in stem cell facilities, already leveraged to more than \$1 billion in linked donations.”
- “California is host to a steadily growing cadre of world-class scientists, dedicated state-of-the-art facilities, training programs, and support programs... leading from basic stem cell research findings in the laboratory to treatments and cures.”

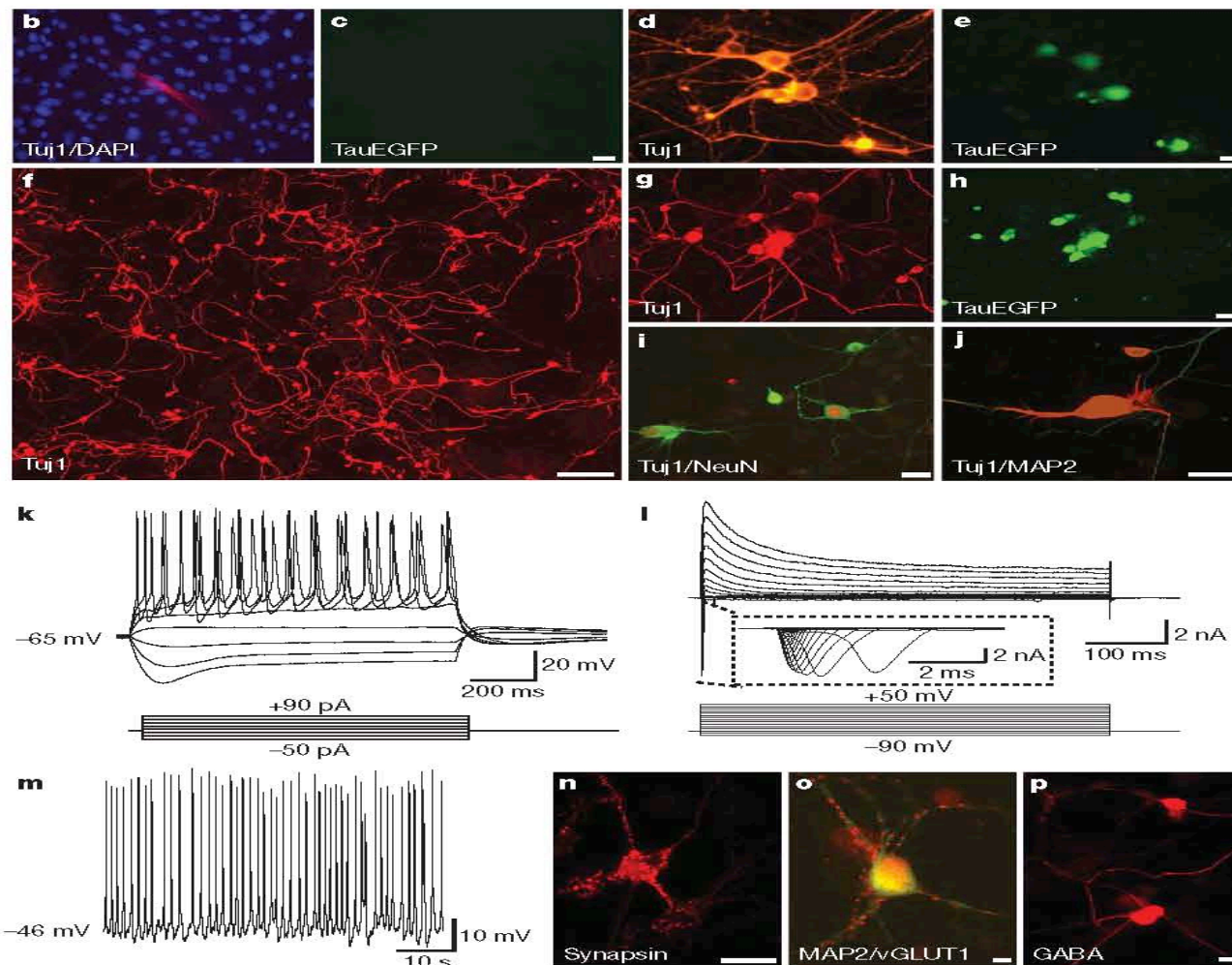
Direct Conversion of Fibroblasts to Functional Neurons by Defined Factors

Vierbuchen, Ostermeier, Pang et al.; Marius Wernig's Lab
Stanford University. *Nature* 27th Jan. 2010

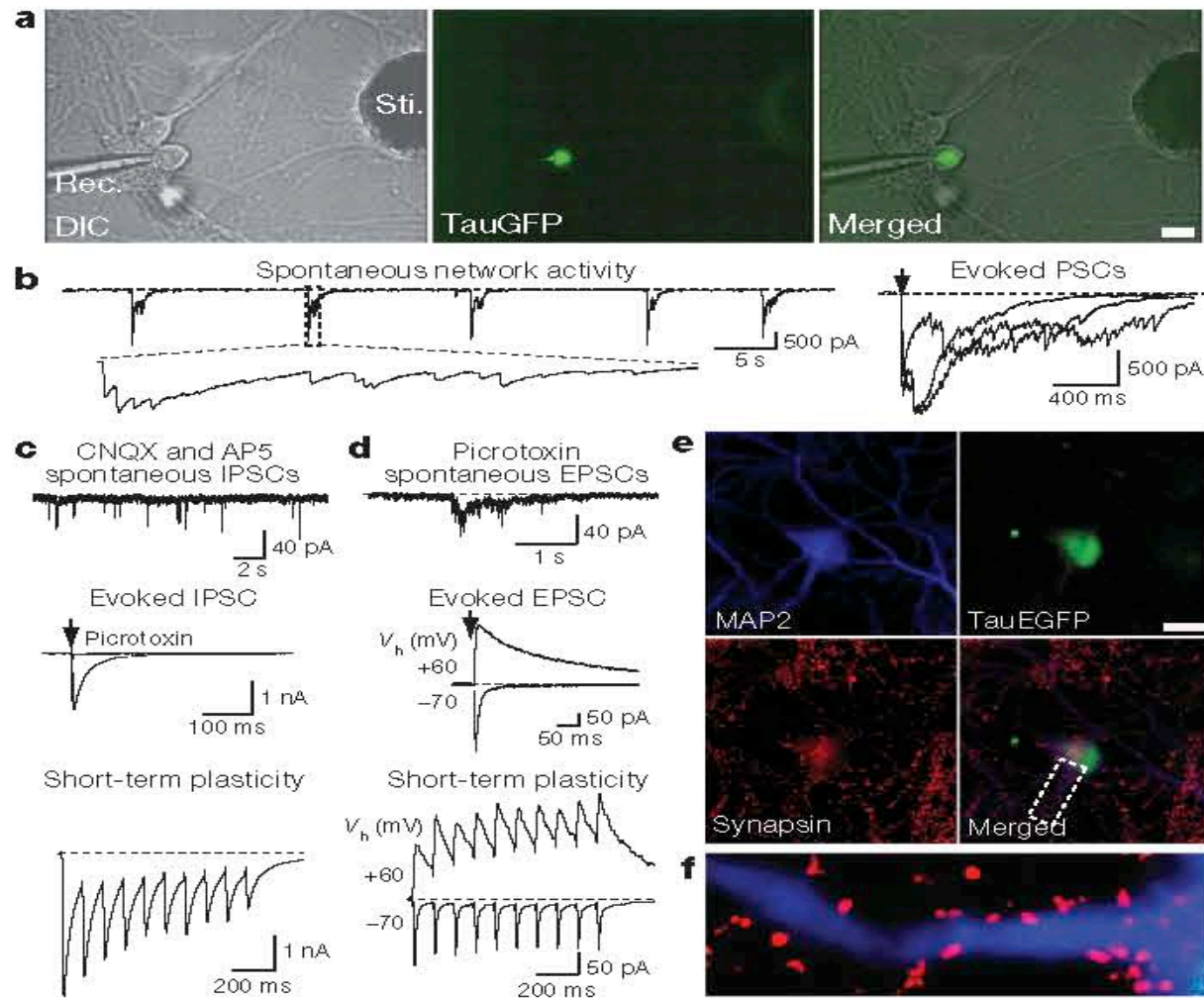
- Hypothesized that a panel transcription factors would convert skin cells directly to neurons (iNs)
- Pool of lentiviruses containing 19 genes critical for neurons used to infect skin fibroblasts from TauEGFP KI mice (fluorescent green neurone marker)



- The gene *Asd1*(*Mash1*) could induce green Tuj1+ cells
- The genes *Brn2*, *Brn4* (*Pou3/4*), *Mytl1*, *Zic1* and *Olig2* potentiated the neuron forming property of *Asd1*
- *Asd1*, *Brn2* and *Mytl1* were sufficient to efficiently convert fibroblasts to functional neurons



- The efficiency of conversion to neurons was 1.8% from MEF and 7.8% from TTF iNs
- iNs have normal membrane properties and form functional synapses in vitro



Implications

- Possible that only one gene is really necessary to activate the conversion of fibroblasts to neurons
- Why isn't this a mechanism for neural regeneration in vivo?
- Can this direct conversion be used clinically? – cell numbers may be inadequate
- Can other tissues be formed in a more direct conversion using other transcription panels? – note Doug Melton's induction of insulin production using 3 transcription factor conversion of endocrine cells in vivo.



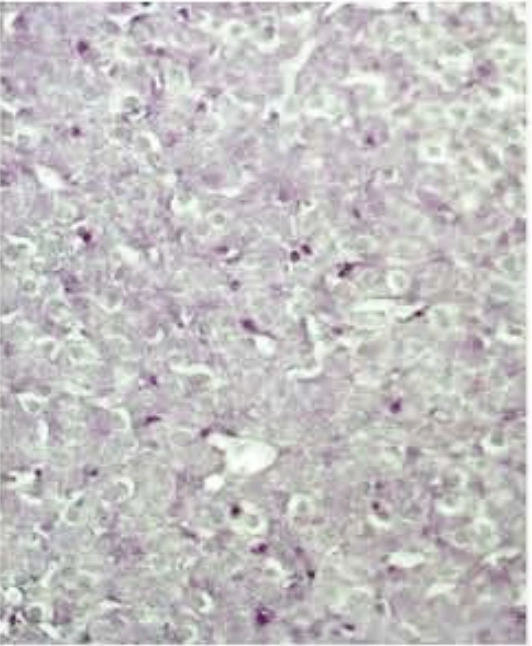
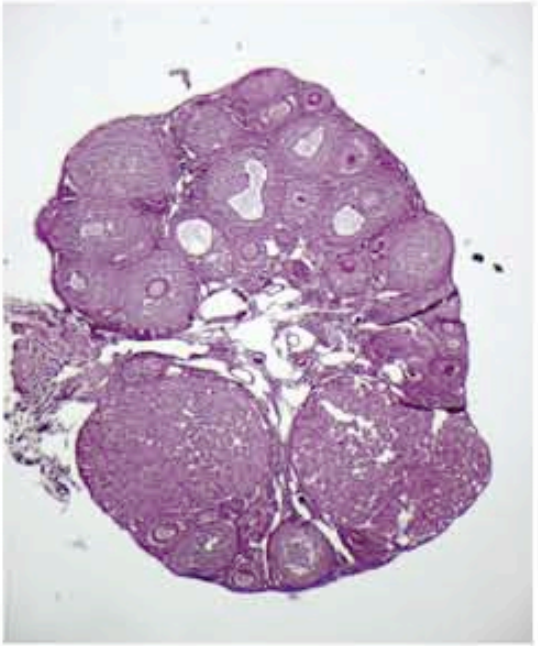
**Somatic Sex Reprogramming of Adult Ovaries to Testes by
FOXL2 Ablation Uhlén et al., EMBL Germany, MRC Natl
Inst Med Res, Baylor Coll Med, Uni Cologne- M Treier
*Cell 139, 1130, Dec 2009***



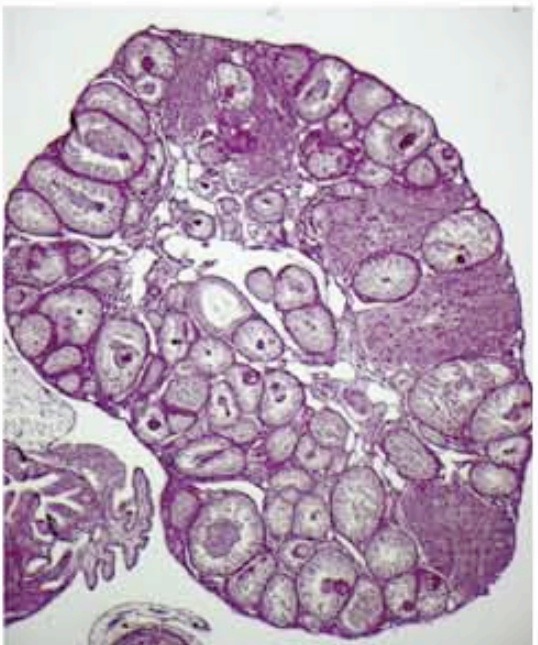
- In the mouse, the forkhead transcription factor FOXL2, is required to prevent transdifferentiation of an adult ovary to a testis
- Inducible deletion of *foxl2* in adult ovarian follicles leads to immediate upregulation of testis-specific genes
- Also reprogramming of follicle granulosa and theca cells into Sertoli-like and Leydig-like cell types with testosterone levels comparable to normal XY males



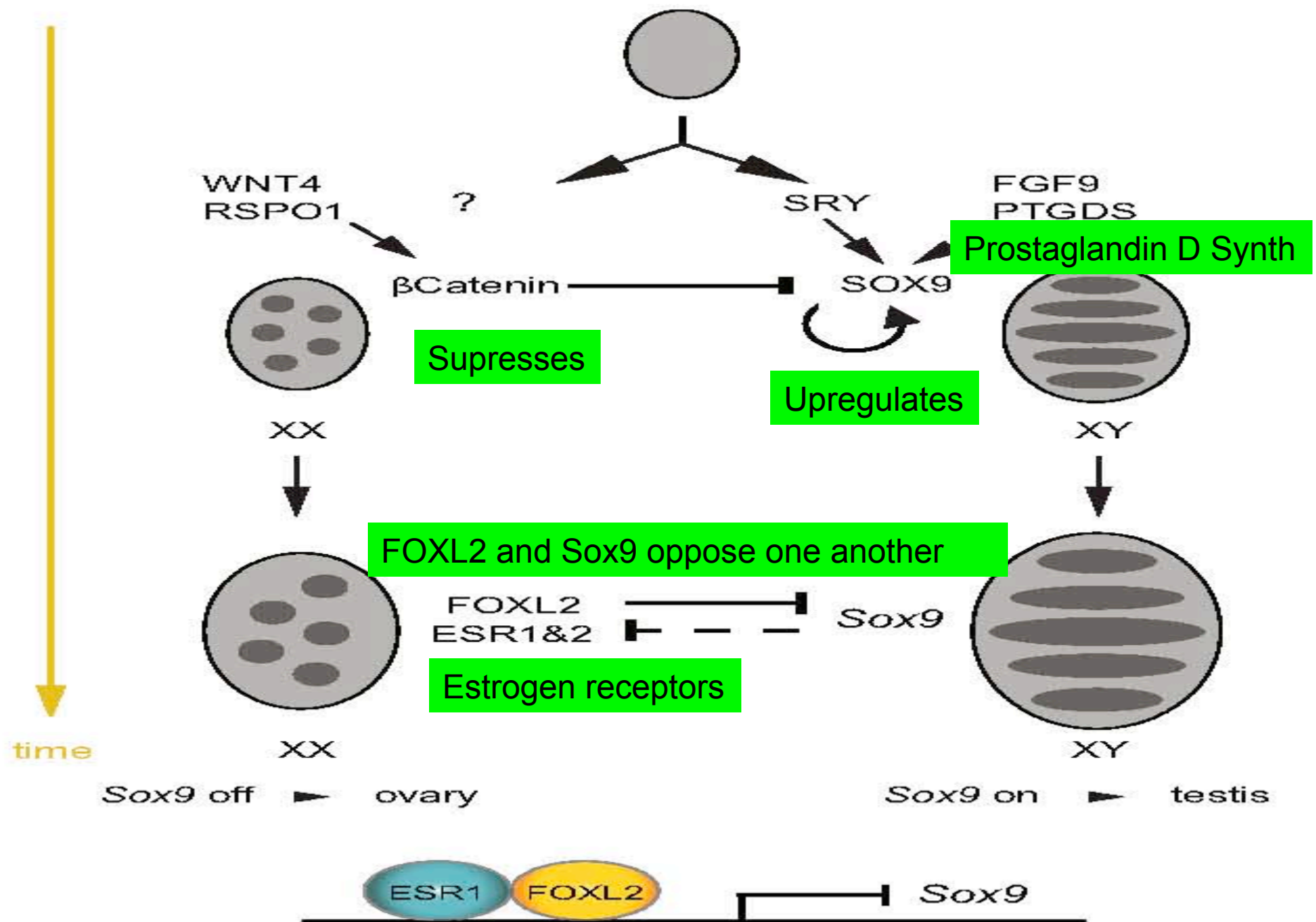
XX *Foxl2^{f/f}*



R26CreERT2;XX *Foxl2^{f/f}*



Features of
Sertoli cells



Opposing microRNA families regulate renewal in mouse embryonic stem cells. Melton, Judson & Robert Blelloch UCSF *Nature* Jan 6 2010

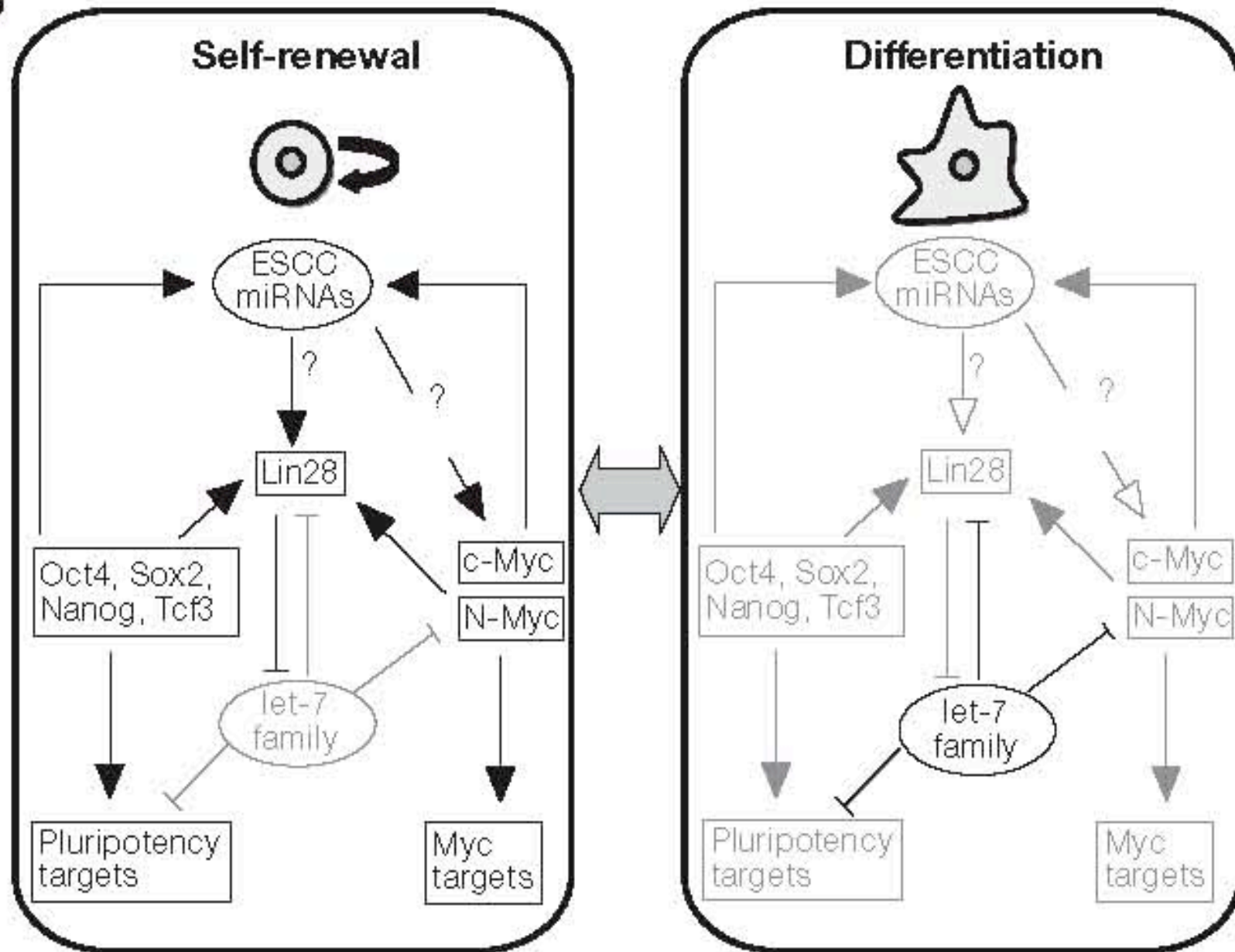


- In the absence DGCR8 – protein required for miRNA synthesis – mouse ES cells are unable to silence self renewal.
- Let-7 miRNA can suppress self renewal in the absence of DGCR8
- Showed that Let-7 inhibits, whereas ESCC (ES cell cycle regulating miRNA) indirectly activate numerous self-renewal genes.
- Inhibition of Let-7 family genes promotes dedifferentiation to iPS cells



Toggle-Switching

b

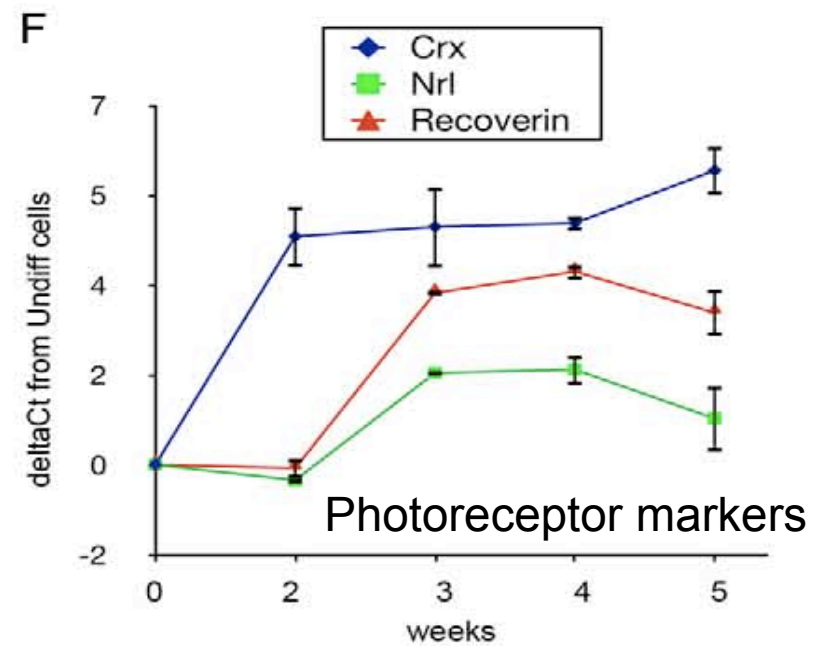
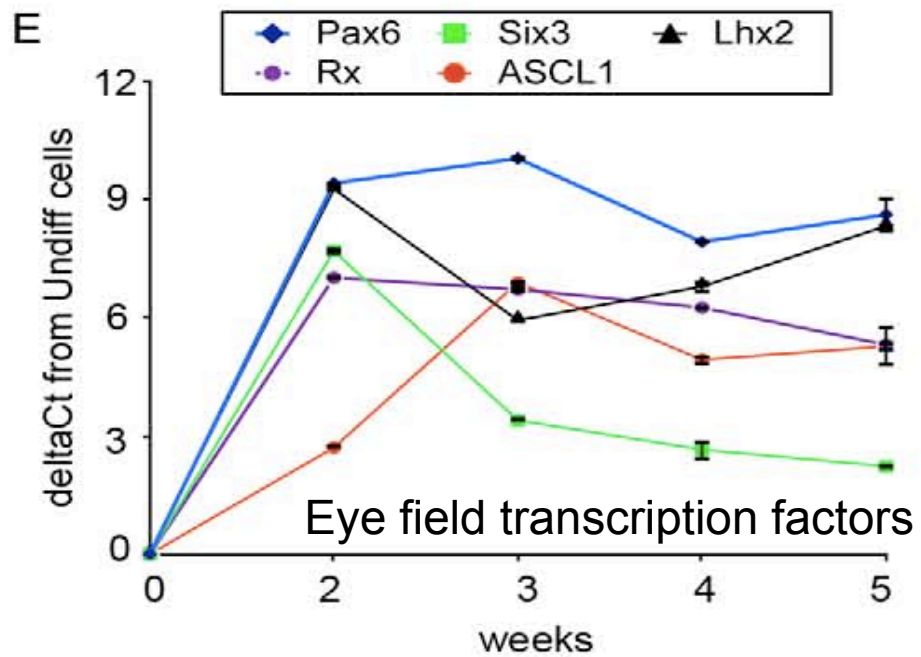
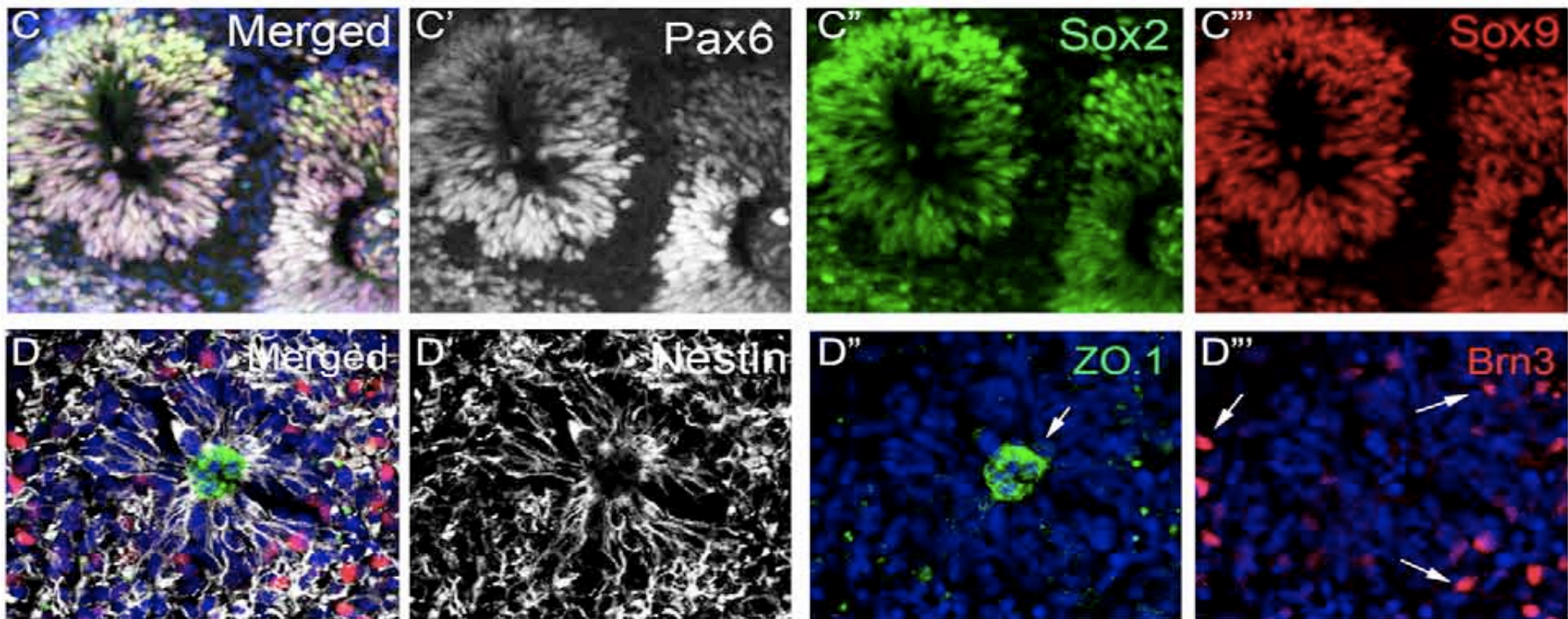


Generation purification and transplantation of photoreceptors derived from human induced pluripotent stem cells. Lamba et al. Uni Washington Seattle. PLoS one Jan 20 2010



- Made iPSC from human fibroblasts
- Differentiated iPSCs to retinal progenitors – competent to generate photoreceptors
- Purified photoreceptor fraction by FACS)GFP
- On transplantation integrated in mouse retina expressing photoreceptor markers





President's Priorities



- VP R&D Search
- Grant issues
 - Californian science leadership on Pre-application processes
 - Data gathering for review of extraordinary petitions
 - Submission of new data prior to review
 - Aggregated percent effort of PIs
 - Industry presence on Grants Working Group
 - Loans and company issues with CIRM regulations
- International agreements and project monitoring
- Patent issues



President's Priorities

- Developing networks between US science and industry
- Continued dialogue with industry and FDA on enhancing success of the stem cell clinical pipeline
- CIRM 2010 External Review
- CIRM economic stimulus issues
- CIRM Development Portfolio Review – Dr Olson to present to ICOC April
- Opportunities for pluripotent stem cell clinical trials
- Regulatory pathway issues for stem cell therapies
- CIRM Workshops

Upcoming Grant Reviews

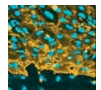
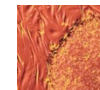


- **Basic Biology II**
 - Invited Applications – 57
 - Application Deadline – Dec 8, 2009
 - GWG Review – February 22-23, 2010
 - ICOC – April 28-29, 2010



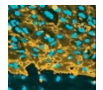
Upcoming RFAs

- **Stem Cell Transplantation Immunology**
 - Review – April 8-9, 2010
 - ICOC – June 22-23, 2010
- **Research Leadership Awards**
 - First application deadline – Feb 18, 2010
 - ICOC – April 28-29, 2010
- **Early Translational II**
 - Post RFA – Feb 2010
 - Receipt of pre-apps – March 18th
 - Full Grant applications – June 30th
 - Review – Sept 2010
- **Tools, Technologies & Bottlenecks**
 - Concept clearance – Feb 2010
- **Clinical**
 - Concept clearance – March 2010



2010 Program of CIRM Workshops

- CIRM Diversity Workshop, Drew University, LA - Feb 26th
- CIRM Grant Writing Webinar - March 3rd
- CIRM Grantee Meeting, San Francisco - March 3-5th
- Germany/CIRM Science Collaboration, San Francisco - March 6th
- Maryland (TEDCO)/CIRM Science Collaboration, MD - March 11-12th
- CIRM Consortium/FDA Webinar – April 2010
- MRC UK/CIRM SCNT/Parthenogenesis, San Francisco - June 13-14th
- ISSCR/CIRM/ISCT – Clinical Trials Regulatory Harmonization,
San Francisco - June 15th
- ISSCR Annual Meeting, San Francisco - June 16-19th
- China/CIRM Science Collaboration, San Francisco - June 20-21st
- Spain/CIRM Science Collaboration - Q3
- The Netherlands/CIRM Science Collaboration - Q4



CIRM Workshop: The Role of CIRM in Enhancing Diversity – February 26, 2010



Goal: Identify how CIRM can enhance diversity in the field of Regenerative Medicine

- Location: Charles Drew University, LA**
- Target Audience: CIRM --** To gain a greater understanding of how diversity affects, benefits, and incorporates the fulfillment of CIRM's mission and to use this knowledge as a foundation for the development of funding initiatives that support diversity in regenerative medicine
- Topics:**
 - Science and Diversity in Regenerative Medicine**
 - Attracting patients and physicians to clinical trials**



Proposed Joint UK-CIRM *Workshop on SCNT /Parthenogenesis*



Workshop on human somatic cell nuclear transfer (SCNT) with UK/MRC

Location: San Francisco - June, 2010

Target audience: CIRM – assess SCNT and parthenogenesis for SCs

Expected attendance: scientific leaders in non-human and human SCNT

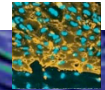
Topics:

- mammalian and non-human primate SCNT – lesson learned
- animal oocyte – human nuclear xenotransfer – a viable alternative?
- human SCNT – status
- parthenogenesis – a viable road to immune compatible cell lines?
- SCNT-iPSC comparison in mouse – can iPSC replace SCNT?
- mitochondrial diseases – SCNT as a potential therapy?



VP R&D Search Update

- **Focus of search**
 - MD or MD/Ph.D. with clinical development experience (especially pre-clinical, Phase I and II)
 - Proven track record representing development programs before the FDA
 - Excellent collaborator and facilitator
- **Candidate backgrounds are focused in the following areas:**
 - Biotech/Regenerative Medicine
 - Pharmaceutical

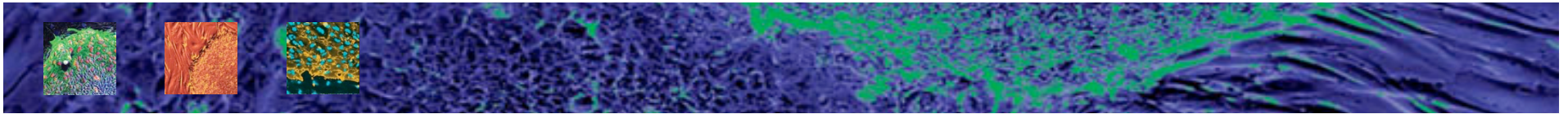


VP R&D Search Update



- The focus is now on 6/(80) potential candidates with meetings undertaken and arranged with senior CIIRM staff and some members of the Board
- Three international candidates
- One interstate candidate
- Two Californian candidates





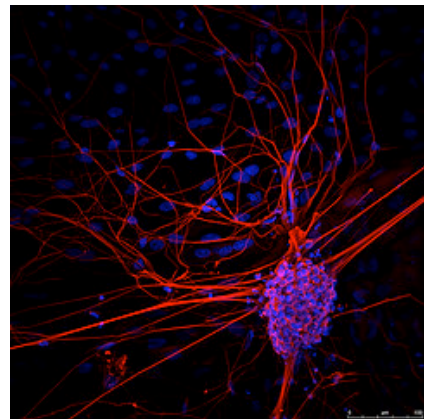
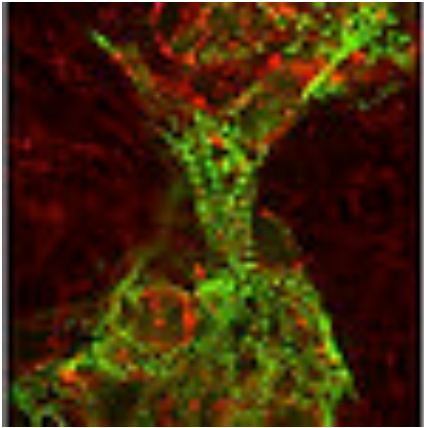
The state stem cell agency

Communications

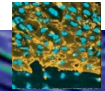
Don Gibbons
Chief Communications Officer



Communications Update



- Working with traditional media
- Bypass what's left of traditional media
- Going face-to-face
 - Slide deck for the board
 - Slide deck for patient groups
 - Town forums
 - Stem Cell Awareness Day
- Grantee communications workshop
- Annual report
- High school curriculum



Los Angeles Times

Date:
Location:
Circulation (DMA):
Type (Frequency):
Page:
Keyword:

Sunday, January 10, 2010
LOS ANGELES, CA
1,107,074 (2)
Newspaper (S)
A1,A14
City of Hope

Windfall may speed stem cell cures to patients

Prop. 71 funds are focused on research with near-term goals.

KAREN KAPLAN

Dr. Karen Aboody estimates that she has cured several hundred mice of a cancer of the central nervous system called neuroblastoma.

First she injected them with specialized neural stem cells

For 3½ years, the agency focused on the basic groundwork needed to someday use human embryonic stem cells to replace body parts damaged by injury or disease. Such cures are still far in the future.

Now the institute has a more immediate goal: boosting therapies that are much further along in development and more often rely on less glamorous adult stem cells. It is concentrating its vast financial resources on projects that could cure conditions such as spinal

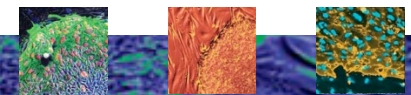
less crucial.

And since Proposition 71 was passed, scientists have created new kinds of stem cells — known as induced pluripotent stem cells — that can be coaxed to form many different types of tissues but are made without harming embryos and thus are eligible for federal funding.

When the institute handed out nearly \$230 million in October to 14 research teams, including Aboody's at City of Hope, it was its largest scientific investment by far. But it came with strings attached: In four years, recipients should have a clinical trial request ready to file with the FDA. Only four of the projects involve embryonic stem cells.

A new emphasis

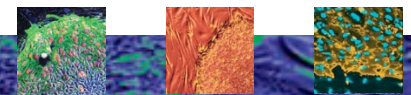
It is a significant change in direction for an effort originally designed to bolster research on human embryonic stem cells.

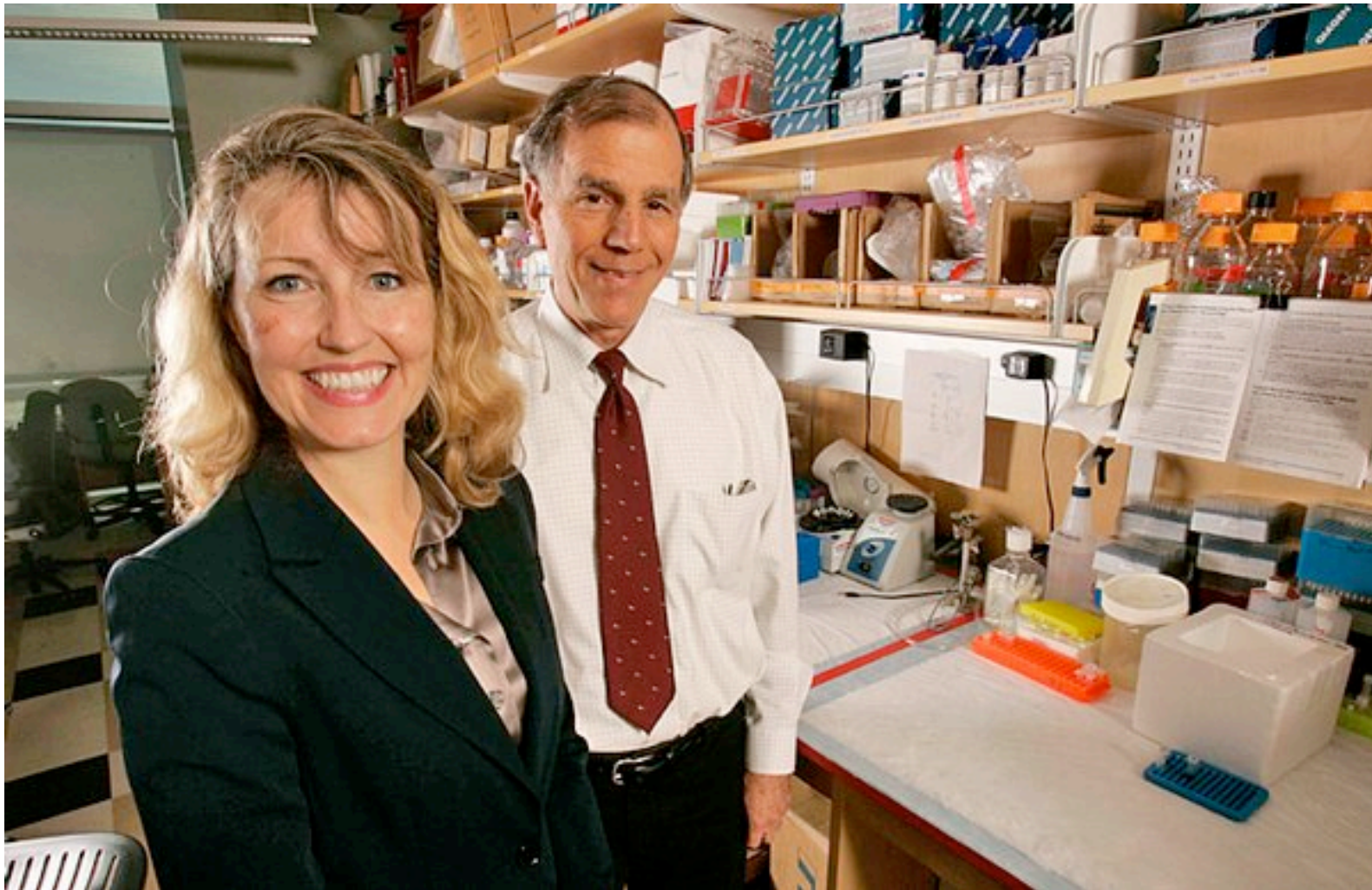




GINA FERAZZI Los Angeles Times

RESEARCH: Dr. Karen Aboody saw her sister-in-law suffer from breast cancer that had spread to her brain. She's convinced that stem cell therapy can be more effective and less debilitating. The Proposition 71 money will help her work.



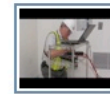
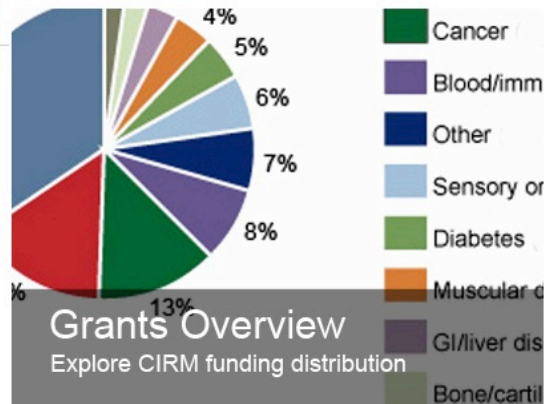


By Scott LaFee, UNION-TRIBUNE STAFF WRITER



EXPLORE FUNDING

See how CIRM grants are distributed across different cell types and disease categories.



LATEST PRESS RELEASE

- January 15 2010
All 12 CIRM Major Facility Projects Moving Forward, Creating Jobs Today And Hope for Cures Tomorrow
- December 10 2009
CIRM Provides \$11 Million Boost in Funding to Train Stem Cell Scientists
- October 28 2009
CIRM, the UK and Canada Award more than \$250 Million to Accelerate the Pace of Bringing Stem Cell Therapies to the Clinic

[Visit News Room](#)

NEWS LETTER SIGNUP

Sign up to receive email alerts about CIRM news and events.

ANNOUNCEMENTS

- January 27 2010
Statement from CIRM Regarding Resolution Passed by CFAOC Endorsing Certain Recommendations of the Little Hoover Commission
- January 14 2010
Statement on American Journal of Public Health Report on CIRM

[See all Announcements](#)

CIRM FUNDING OF STEM CELL RESEARCH

Our Contributions

- Saving lives:** CIRM-funded research has already produced a therapy in clinical trials
- Creating jobs:** Our major facilities are generating 13,000 job-years of employment, bringing in \$100 million in tax revenue
- Lowering costs:** Therapies funded by CIRM will be available in California at discounted pricing

[Read more about benefits to California](#)

Our Funding

- [Learn about CIRM rounds of funding](#)
- [Apply for funding](#)

Click the map to learn about CIRM-funded Institutions





The state stem cell agency

Proposition 71

Creating Jobs and a New Economic Engine Today

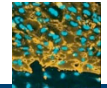
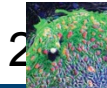
Creating Cures Tomorrow *Maybe Two Already*

name

title

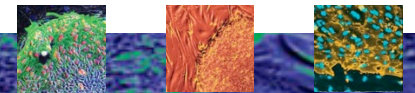
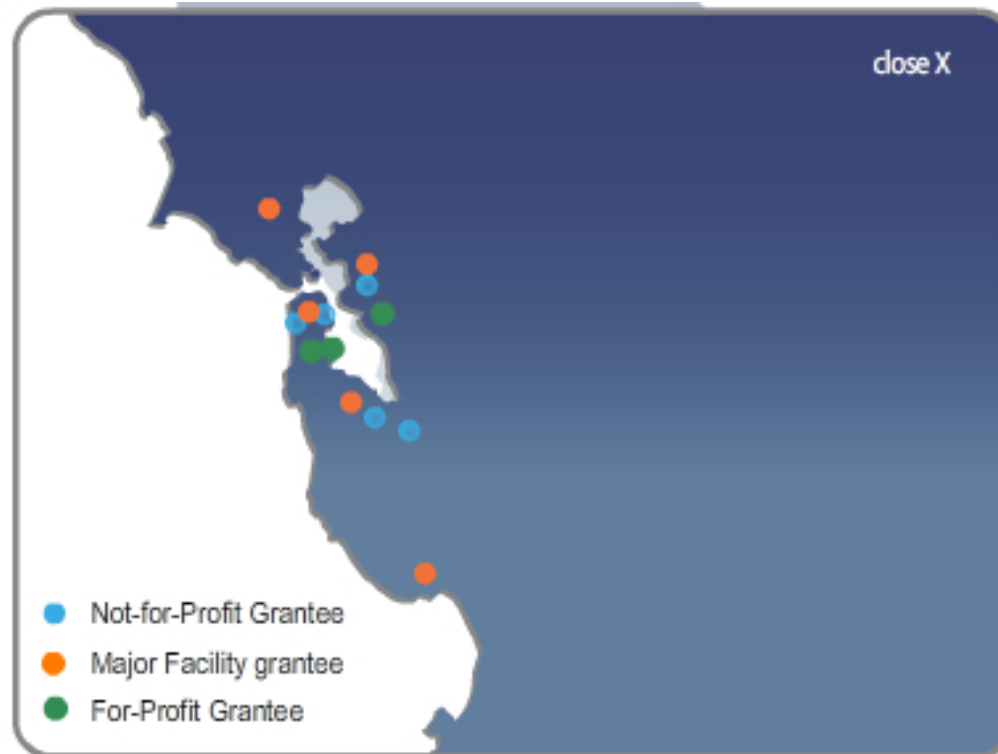
date

10/20/09





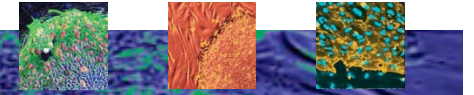
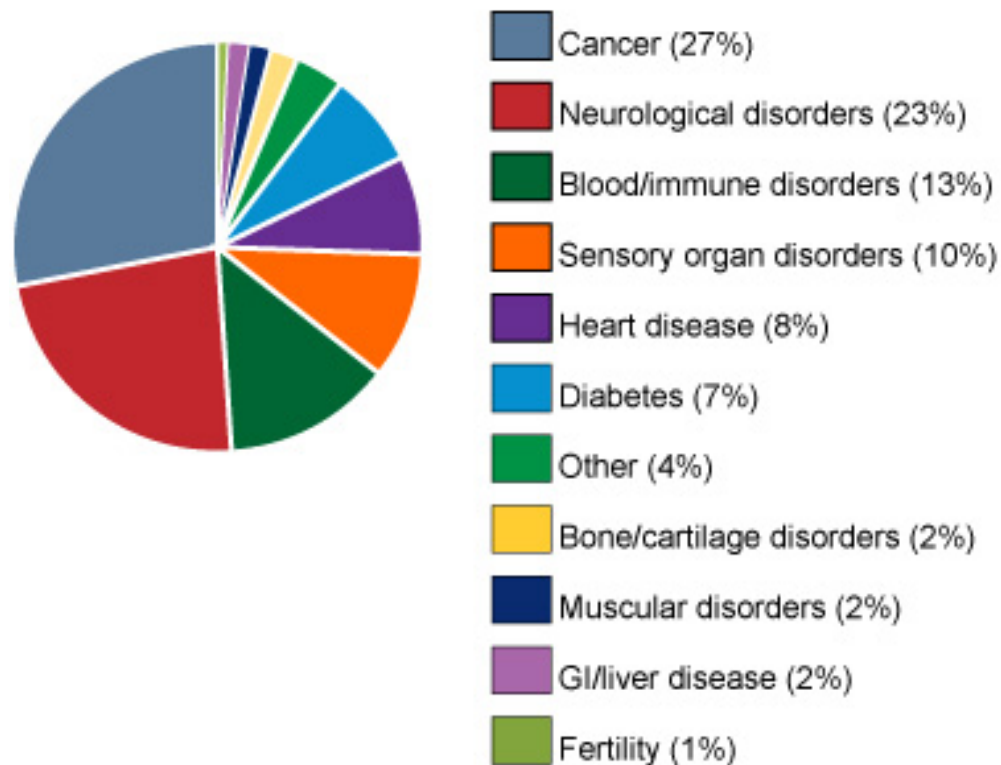
SF Bay Area



- Disease areas funded

Grant distribution: Funding by disease category

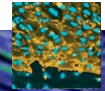
Percentages by funding level



Communications Update



- Working with traditional media
- Bypassing what is left of traditional media
- Going face-to-face
 - Slide deck for the board
 - Slide deck for patient groups
 - Town forums
 - Stem Cell Awareness Day
- Communications workshop for grantees
- Annual report
- High school curriculum



Delivering Stem Cell Therapies to the Clinic

How disease team researchers are tackling diabetes and amyotrophic lateral sclerosis (ALS)

San Diego
Natural History
Museum

March
31st
2010

6:00 –
7:30 PM

Speakers:

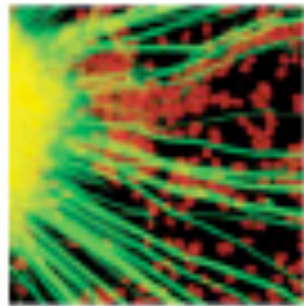
E. Edward Baetge, Ph.D

Senior Vice President and Chief Scientific Officer, Novocell

Samuel Pfaff

Professor and Helen McLoraine Developmental Chair in
Neurobiology, The Salk Institute for Biological Studies

California Institute for Regenerative Medicine, the state stem cell agency created by Prop. 71. For more information, please visit www.cirm.ca.gov.

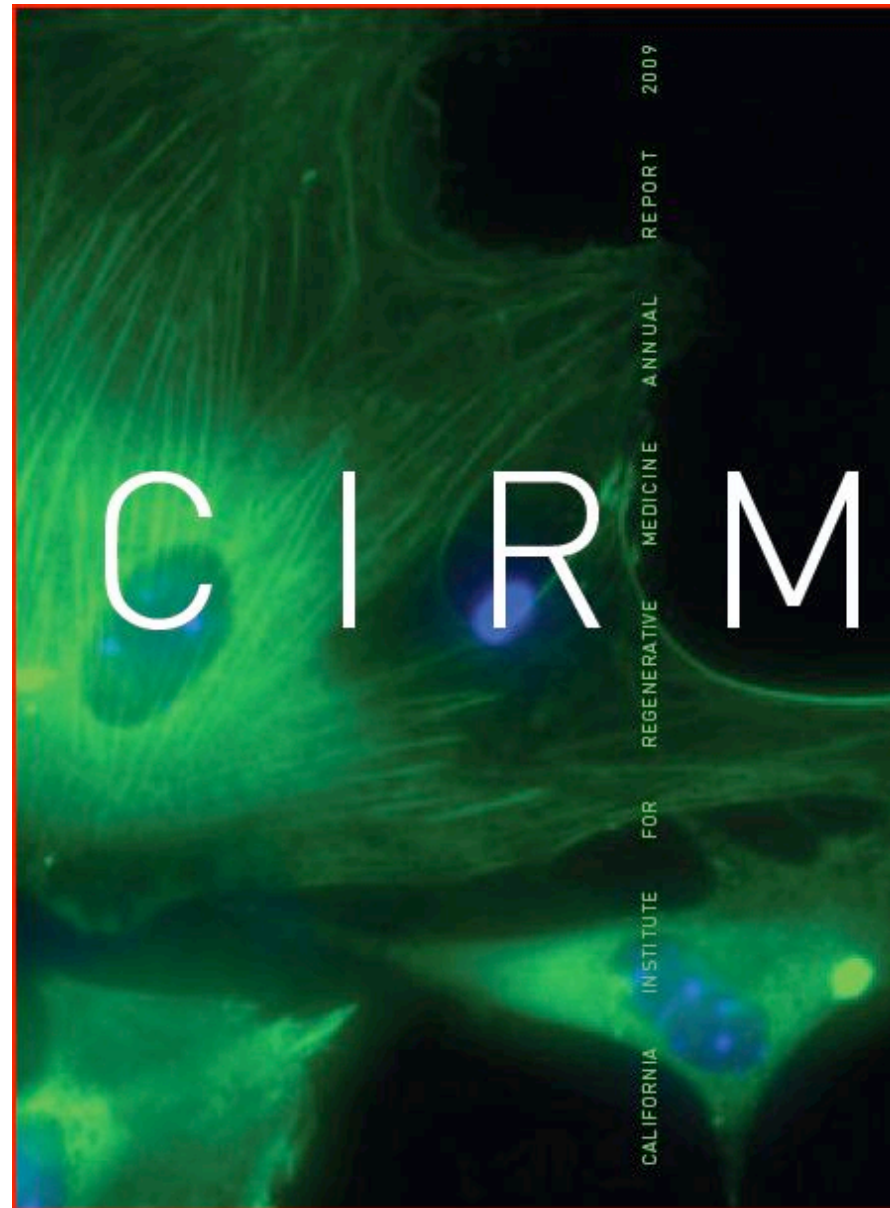


STEM CELL

SEPT
23RD
2009

AWARENESS DAY







CALIFORNIA INSTITUTE FOR
CIRM
 REGENERATIVE MEDICINE

The State Stem Cell Agency

Home

MODEL STEM CELL SCIENCE CURRICULUM

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CIRM model curriculum on stem cell science

The following materials consist of **introductory and summary PowerPoint presentations** and **detailed lessons (modules)** developed by CIRM staff or CIRM-sponsored outreach programs, in collaboration with high school teachers in the Bay Area and San Diego. These detailed lessons comprise the "CIRM model curriculum on stem cell science" as discussed in Senate Bill 471 (Romero and Steinberg), the California Stem Cell and Biotechnology Education and Workforce Development Act of 2009, and signed by the Governor.

These materials are suitable for use in 9th through 12th grade biology, advanced biology, AP biology, chemistry, advanced chemistry, AP chemistry, biotechnology, physiology, anatomy, and government courses.

Jump to sections on this page:

- [Introductory lessons on stem cells and regenerative medicine](#)
 - [Download presentations](#)
 - [Schedule a presenter](#)
- [Stem Cell Education Video Series](#)
- [Modules on stem cell science](#)
 - [Download the stem cell units](#)

FOR RESEARCHERS

FOR THE PUBLIC

- [Stem Cell Basics](#)
- [Stem Cell Videos](#)
- [Features](#)
- [Monthly digest](#)
- [Stem Cell Links](#)
- [How can I help?](#)

CIRM OPERATIONS

ABOUT CIRM

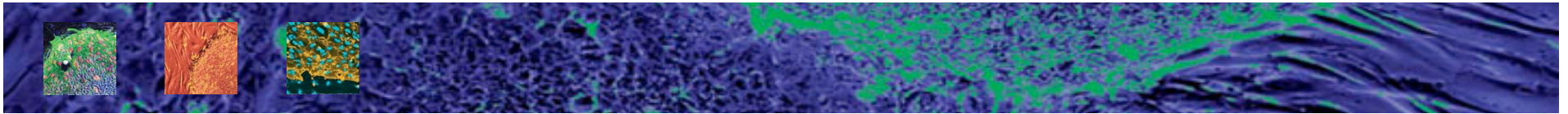


Search CIRM Grants



Explore CIRM Funding





The state stem cell agency

Communications

Amy Adams

Communications Manager

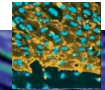


Online Communications



Goal: To reach all demographics with information about CIRM's mission and accomplishments

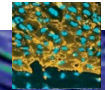
- Web page
-  Facebook
-  YouTube
-  CIRMResearch blog
-  Flickr
- Monthly Digest



Communications Messages



- In all online communication we have the same messages
 - CIRM is creating new stem cell-based cures
 - CIRM is an economic benefit to California

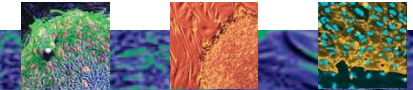


Web page - www.cirm.ca.gov



Goal: To provide all audiences with useful, accessible content

A screenshot of the CIRM website homepage. The header includes navigation links for HOME, MEETINGS, JOBS/RFPs, RSS, and a search bar. The main banner features the CIRM logo and a photo of a family with the text "The State Stem Cell Agency". Below the banner are four tabs: FOR RESEARCHERS, FOR THE PUBLIC, CIRM OPERATIONS, and ABOUT CIRM. The "FOR THE PUBLIC" tab is selected. The main content area is divided into three columns. The left column, titled "CIRM MAJOR FACILITIES", contains text about the construction of 12 state-of-the-art stem cell facilities and links to read about the progress and see a video. The middle column features a large image of a construction crane with the text "CIRM Major Facilities Opening Spring 2010" and a list of smaller images. The right column, titled "LATEST PRESS RELEASE", lists three press releases with dates and brief descriptions. Below the press releases is a "NEWS LETTER SIGNUP" section and an "ANNOUNCEMENTS" section. At the bottom, there is a "CIRM FUNDING OF STEM CELL RESEARCH" section with "Our Contributions" and a map of California.



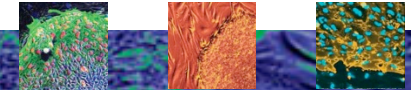
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Goal: To provide all audiences with useful, accessible content

The screenshot shows the homepage of the California Institute for Regenerative Medicine (CIRM) website. The header includes navigation links: HOME, MEETINGS, JOBS/RFPs, RSS, and a search bar. The main banner features the CIRM logo and the text "The State Stem Cell Agency" with a photo of a family. Below the banner are four tabs: FOR RESEARCHERS, FOR THE PUBLIC (selected), CIRM OPERATIONS, and ABOUT CIRM. The "FOR THE PUBLIC" tab is active, showing a large image of a construction crane with the text "CIRM Major Facilities Opening Spring 2010". To the left of this image is a sidebar with the heading "CIRM MAJOR FACILITIES" and text stating that CIRM funded the construction of 12 state-of-the-art stem cell facilities. To the right of the main image is a "LATEST PRESS RELEASE" section with three entries dated January 15, 2010, December 10, 2009, and October 28, 2009. Below the press releases is a "NEWS LETTER SIGNUP" section and an "ANNOUNCEMENTS" section. At the bottom left, there is a section titled "Our Contributions" with three bullet points: "Saving lives", "Creating jobs", and "Lowering costs". A small map of California is also visible in the bottom right corner of the page.

- ~11,000 unique visitors/month
- Spend 3:41 on the site
- View 3.64 pages
- 55% in California
- 109 countries represented



Web page - Education

STEM CELL BASICS

View Edit Revisions Track

Stem Cell Basics Primer

Get up to speed on stem cell research, from basic information about what the cells are to detailed descriptions of how the cells can improve human health.

■ Stem cell definitions

The term "stem cell" by itself can be misleading. There are many different types of stem cells, each with very different potential to treat disease. Learn more about the different types of stem cells and their origins.

■ Creating new types of stem cells

Generating new stem cell lines is a major focus of many CIRM funded researchers. Learn why these new lines are considered so important for the field to move forward.

■ Stem cells as therapies

Stem cells have the potential to treat a wide range of diseases, including diabetes, neurodegenerative diseases, spinal cord injury, and heart disease. Learn why these cells are such a powerful tool for treating disease as well as what the current hurdles are before new therapies can become available.

■ Stem cells accelerating basic research

In addition to replacing lost or damaged tissue, stem cells are expected to accelerate the type of basic drug discovery, drug screening, and disease research that is currently underway. Learn more about the many ways stem cells are used in basic medical research.

■ Stem cell research in California

With funding from CIRM available to California researchers, the state is in a unique position within the United States. Learn more about how CIRM changes the landscape of research in California and about laws in other states.

■ Common questions about stem cell research

There are a lot of myths about stem cell research, the origin of the stem cells themselves, and the type of work that takes place. Learn what really takes place in stem cell research.

FOR RESEARCHERS

FOR THE PUBLIC

Stem Cell Basics

Definition

New Stem Lines

Therapies

Basic Research

California

Common Questions

Stem Cell Videos

Features

Monthly digest

Stem Cell Links

How can I help?

CIRM OPERATIONS

ABOUT CIRM



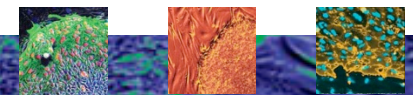
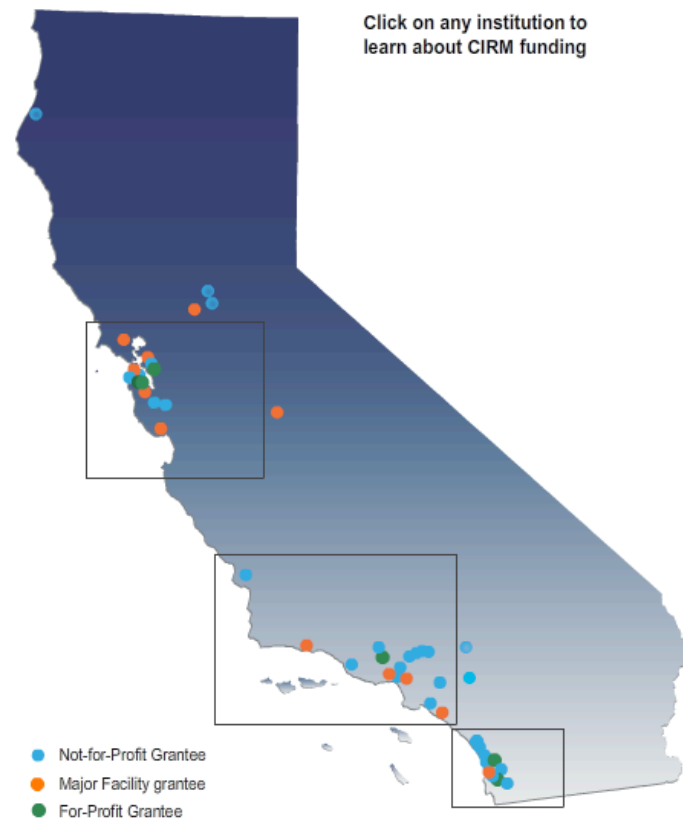
Search CIRM
Grants



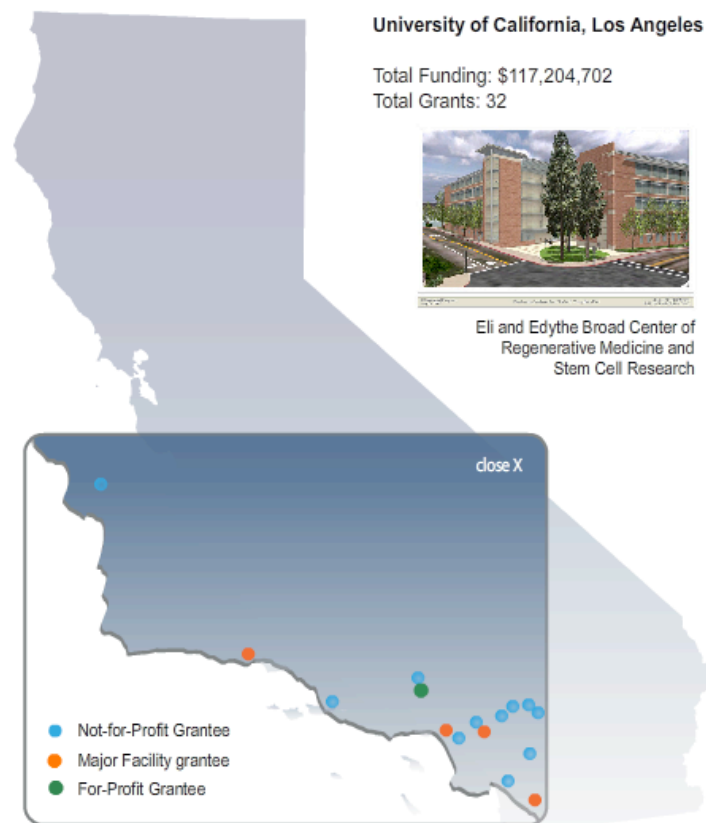
Explore CIRM
Funding



Web page - Interactivity



Web page - Interactivity



Web page - Features

FEATURE: SIGHTS ON A CURE

View Edit Revisions Track

features

Sights on a Cure

STEM CELL SCIENTISTS HAVE MACULAR DEGENERATION IN THE CROSSHAIRS
By Emmanuel Romero

At a 2008 Annual Exhibition in San Francisco's City Hall, abstract painter Virginia Knepper Doyle unveiled "Family Stories 2". The canvas's deliberate swirls of green, blue, beige and olive acrylic paint are meant to signify unity and kinship.



"Sailing on the Bay I." Watercolor. C. 2000.
Before losing her vision, Virginia Knepper Doyle specialized in Impressionistic paintings.

BACK **NEXT**

Slideshow of paintings by Virginia Doyle from before and after she lost her vision.
[•See a larger version](#)

This year, Doyle is following up her "Family" series with a new series centered on Asian bamboo forests. As a nature enthusiast, she believes humankind can rescue these beautiful forests from the brink of extinction. This creativity and passion have taken Doyle's art to audiences around the world, to galleries from New York to Paris.

What her admirers may not know is that Doyle has been visually impaired for the last 11 years, after macular degeneration robbed her of much of her central vision. Since her diagnosis, Doyle has left Impressionism in favor of abstract art and has seen her critical acclaim grow.

"I was trying to be somebody else," she said. "The real me came out, and I didn't care if I made mistakes."

This professional success comes at a price; Doyle has difficulty reading and recognizing faces. Because she cannot drive anymore, her husband has to take her to all her appointments

FOR RESEARCHERS

FOR THE PUBLIC

Stem Cell Basics

Stem Cell Videos

Features

Monthly digest

Stem Cell Links

How can I help?

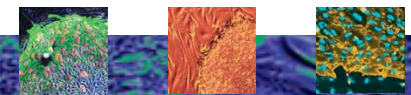
CIRM OPERATIONS

ABOUT CIRM

 Search CIRM Grants

 Explore CIRM Funding

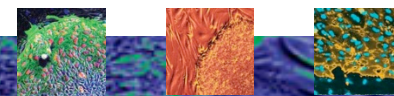
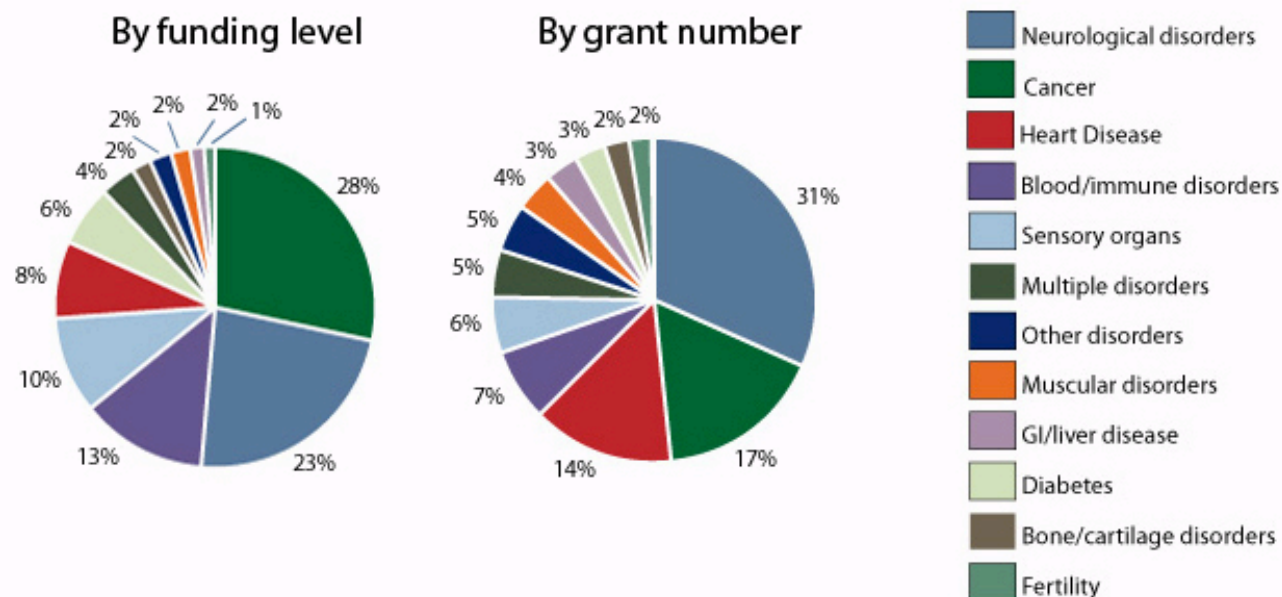
   



Web page – Fund Allocation

Disease categories

Includes all CIRM grants with a disease focus. Areas of disease impact are designated by percentage of committed funds (left) or by percentage of total grant number (right). Does not include grants with broader impacts, such as those seeking to understand basic mechanisms of stem cell biology or developing new tools and technologies for advancing therapies.



Web page – Grant Information

HOME • MEETINGS • JOBS/RFPs • RSS

Search



CALIFORNIA INSTITUTE FOR
CIRM
REGENERATIVE MEDICINE



Home

Locate CIRM Research Funding

Grant Type

Institution

New Cell Lines

<Any>

Apply

Institution	Researchers name	Grant Type	Grant Title	Related Information
Burnham Institute for Medical Research	Zhuohua Zhan	New Cell Lines	Derivation of Parkinson's Disease Coded-Stem Cells (RL1-00682-1)	
Salk Institute for Biological Studies	Fred Gage	New Cell Lines	Development of Induced Pluripotent Stem Cells for Modeling Human Disease (RL1-00649-1)	Videos: <ul style="list-style-type: none">Fred H. Gage talks about using embryonic stem cells to model disease (4:30)
Scripps Research Institute	Sheng Ding	New Cell Lines	Derivation of New ICM-stage hESCs (RL1-00642-1)	
Stanford University	Julie Baker	New Cell Lines	Derivation of hESC Lines with Disease Lesions (RL1-00630-1)	
Stanford University	Michele Calos	New Cell Lines	Safe, Efficient Creation of Human Induced Pluripotent Stem Cells Without the Use of Retroviruses (RL1-00634-1)	
Stanford University	Michael Longaker	New Cell Lines	Derivation and Analysis of Pluripotent Stem Cell Lines with Inherited TGF-Beta Mediated Disorders From Donated IVF Embryos and Reprogrammed Adult Skin Fibroblasts (RL1-00662-1)	Videos: <ul style="list-style-type: none">Scientific Writer's Seminar: Michael Longaker
Stanford University	Renee Reijo Pera	New Cell Lines	Derivation and Comparative Analysis of Human Pluripotent ESCs, iPSCs and SSCs: Convergence to an Embryonic Phenotype (RL1-00670-1)	

FOR RESEARCHERS

Applying for Grants

RFAs

Review Reports

Collaborative funding

CIRM Regulation Guidance

Workshop Reports

FOR THE PUBLIC

CIRM OPERATIONS

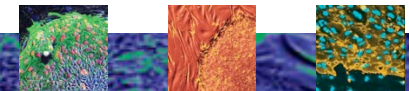
ABOUT CIRM

Search CIRM Grants

Explore CIRM Funding

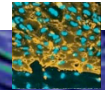
« February 2010 »

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28



Web page - Going forward

- Increase audience
 - More links
 - Better search
 - Be where people are

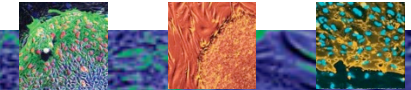


Facebook Fan Page



Goal: To create a community of people who are engaged in the daily advances of CIRM

The screenshot shows the Facebook profile of the California Institute for Regenerative Medicine (CIRM). The profile picture is a large 'C' with a seal inside. The cover photo is a light blue banner with the text 'California Institute for Regenerative Medicine' and navigation tabs for 'Wall', 'Info', 'Boxes', 'RSS/Blog', 'YouTube Box', and a '+' icon. Below the cover photo is a text box asking 'What's on your mind?' with an 'Attach' button and a 'Share' button. The 'Info' tab is selected, showing the page's name, 'Just Fans' status, and a 'Settings' link. The 'About' section describes CIRM's mission: 'CIRM funds adult and embryonic stem cell research at institutions and for-profit organizations in California. These funds are accelerating a field of research that holds the possibility of bringing new therapies for debilitating disease and injuries.' The 'Location' is listed as '210 King St, San Francisco, CA, 94107' and the 'Phone' as '415 396-9100'. The 'Insights' tab is also visible. A post from 'California Institute for Regenerative Medicine' is shown, featuring a story from the San Diego Union Tribune about a \$20 million CIRM Disease Team Award given to Catriona Jamieson and partners in Canada. The post includes a photo of the award recipients and a link to 'Leukemia under the microscope - SignOnSanDiego.com'. The post has 4 likes and was shared 11 hours ago. A comment from Judy Roberson is also visible, thanking CIRM for the award and mentioning a friend who died from leukemia at age 32.



Facebook – Going forward



- Increase fans
- Maintain engagement
- Use Facebook campaigns to involve fans in outreach and education

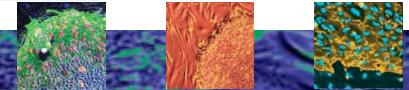


YouTube



Goal: To educate people about CIRM's accomplishments and the value of stem cell research

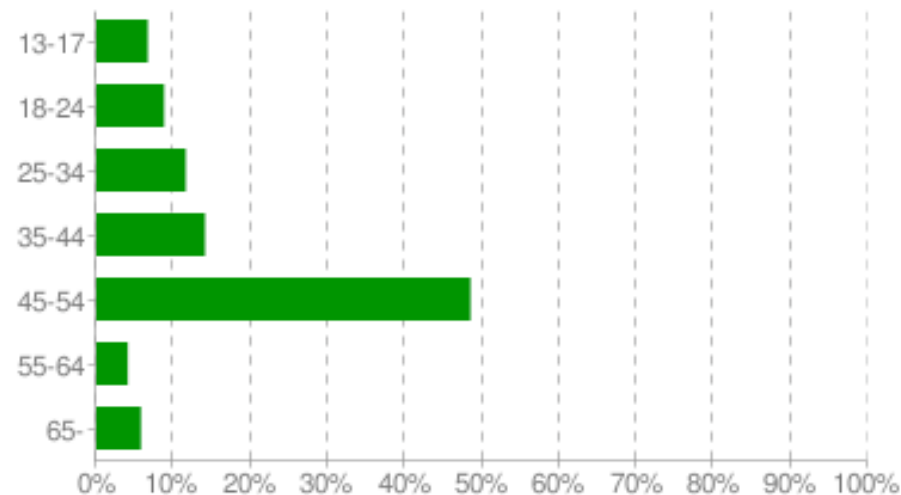
A screenshot of a YouTube video player interface. The channel name at the top is "California Institute for Regenerative Medicine" with the subtext "CIRMTV's Channel" and a "Subscribe" button. The video title is "Bringing Stem Cell Cures to the Clinic: UC Davis GMP Facility" with 3 ratings (★★★★★) and 1,248 views. The description states: "From: CIRMTV | November 13, 2009 | 1,248 views. The FDA requires the use of a Good Manufacturing Practice (GMP) facility for taking stem cell-based therapies into clinical trials. This GMP facility is a clean-room laboratory that ensures the therapeutic products will be safe and contamination-free for patients." The video player shows a scene with people in white lab coats working in a cleanroom. To the right of the video player, there are sections for "Uploads (25)" and "CIRM News (6)". The "Uploads" section lists three videos: "Bringing Stem Cell Cures to the Clinic: UC Davis GMP" (1,248 views), "Progress and Promise in Macular Degeneration" (1,104 views), and "Progress and Promise in Parkinson's Disease" (10,113 views). The "CIRM News" section lists three videos: "Obama Inauguration: A Positive Change in Federal" (1,050 views), "CIRM Major Facilities Speed Science and Create Jobs" (1,771 views), and "Genetic Molecule Enables Safer Method For Creating" (1,001 views). At the bottom of the video player, there are links for "Info", "Comments", "Favorite", "Share", "Playlists", and "Flag".



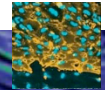
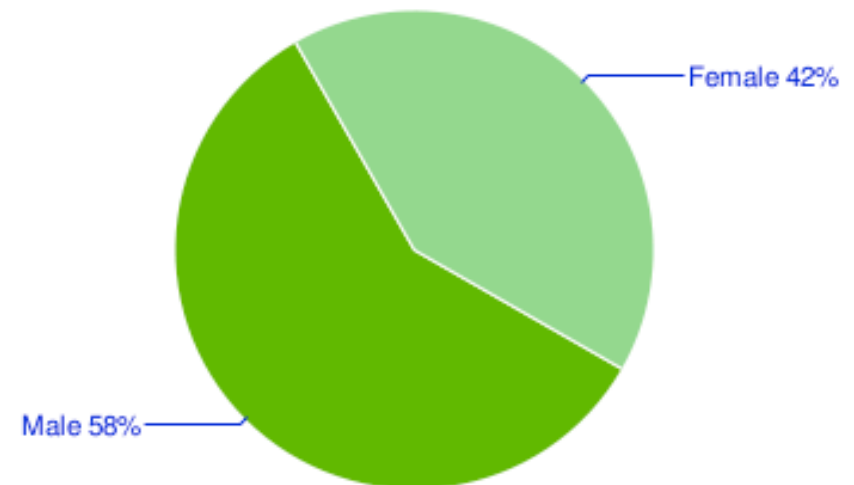
YouTube – Our audience

Demographics

Age ranges for: ☒ All ☐ Male ☐ Female



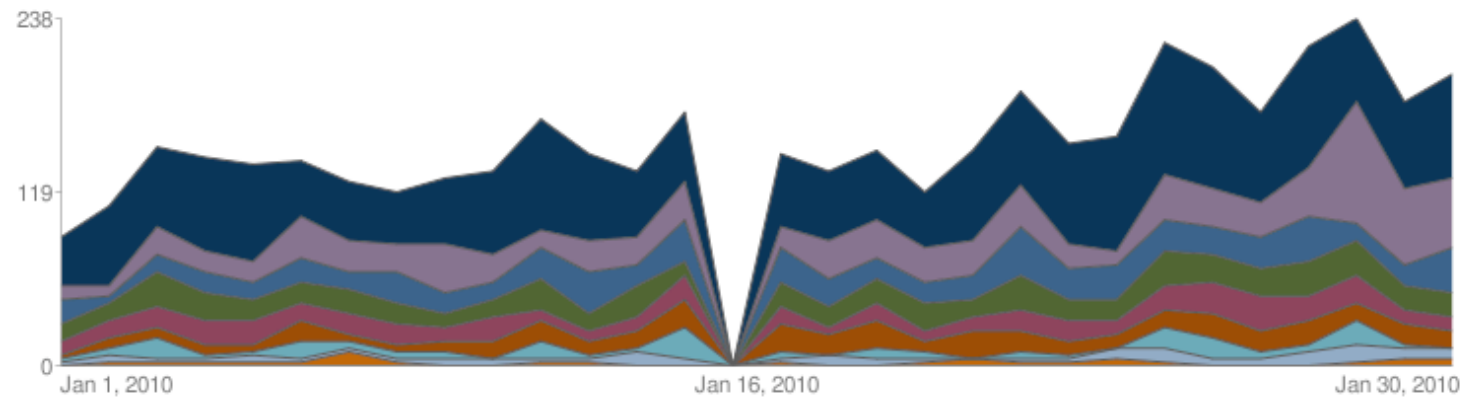
Genders for all age groups



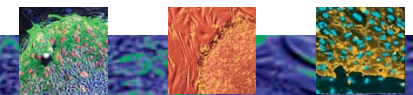
YouTube – How viewers find us

Discovery How are people finding the videos in this channel?

Share of each source Display as: ☒ Stacked chart ☐ Line chart

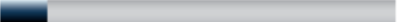
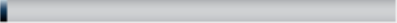

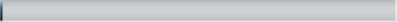

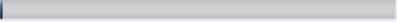

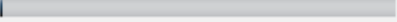

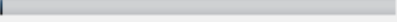


<input checked="" type="checkbox"/> Source of views	Views	% of total views
<input checked="" type="checkbox"/> YouTube search	1680	36
<input checked="" type="checkbox"/> Embedded player	727	15
<input checked="" type="checkbox"/> Related videos	546	11
<input checked="" type="checkbox"/> Google search	488	11
<input checked="" type="checkbox"/> External links	373	8.1
<input checked="" type="checkbox"/> Viral / other (?)	336	7.3
<input checked="" type="checkbox"/> YouTube channel page player (?)	172	3.7
<input checked="" type="checkbox"/> YouTube other	137	3.0
<input checked="" type="checkbox"/> Mobile devices	95	2.0

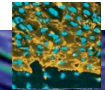


YouTube – How viewers find us

Most viewers arrive via YouTube/Google search

<input checked="" type="checkbox"/> YouTube search Show all discovery	Views	33.0% of total
<input checked="" type="checkbox"/> macular degeneration	32	12 
<input checked="" type="checkbox"/> stem cells and macular degeneration	4	1.6 
<input checked="" type="checkbox"/> what is macular degeneration	2	0.8 
<input checked="" type="checkbox"/> macula degeneration	2	0.8 
<input checked="" type="checkbox"/> degeneration	2	0.8 
<input checked="" type="checkbox"/> macular degeneration stem cell	2	0.8 
<input checked="" type="checkbox"/> macula dee generatie	2	0.8 
<input checked="" type="checkbox"/> stem cel eye maculer	2	0.8 
<input checked="" type="checkbox"/> macular degeneration in bc	2	0.8 
<input checked="" type="checkbox"/> wet macular degeneration	2	0.8 

⏮ ⏪ ⏩ ⏭



YouTube – Attention ratings

My Account ▾ / Insight Statistics

All Videos

Summary

Views

Discovery

Demographics

Community



**Progress and Promise
in Macular Degeneration**

Views

Discovery

Demographics

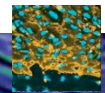
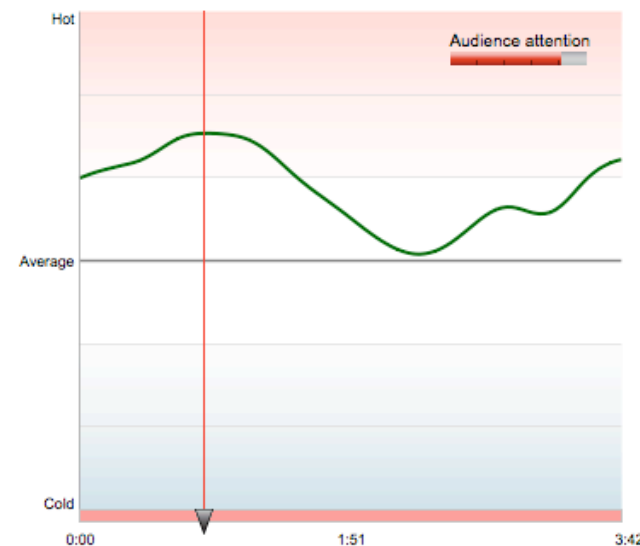
Community

Hot Spots

Hot Spots The ups-and-downs of viewership at each moment in your video, compared to videos of similar length.



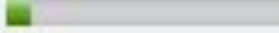

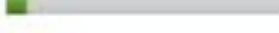

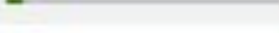









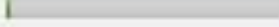

The higher the graph, the hotter your video: fewer viewers are leaving your video and they may also be rewinding to watch that point in the video again.

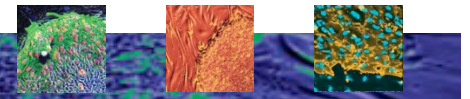
Audience attention is an overall measure of your video's ability to retain its audience.



YouTube – Attention is high globally

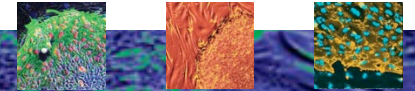
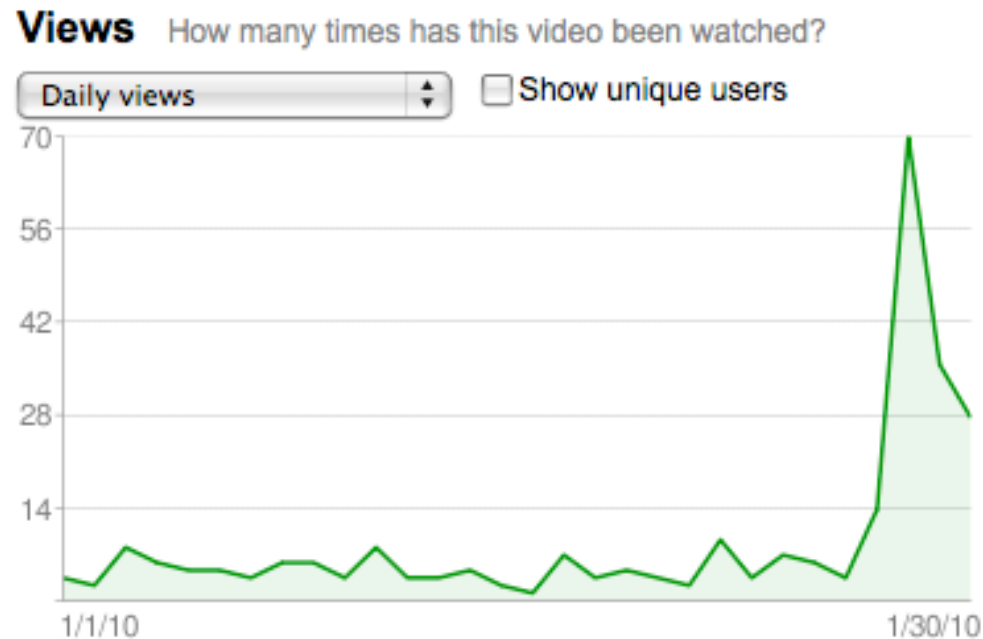
My videos

Video	Views (% of total)	Attention	
Progress and Promise in Parkinson's	47.2		
Bringing Stem Cell Cures to the	8.9		
Irv Weissman: Differences betw	8.0		
Jerome Zack: Creating iPS Cells	6.6		
Progress and Promise in Macul	5.6		
Hans Keirstead: Developing the	3.8		
Catriona Jamieson: Therapies E	2.7		
CIRM Major Facilities Speed Sci	2.3		
Paul Knoepfler: Tumor Formatio	1.6		
Spotlight on Leukemia	1.6		



YouTube – How viewers find us

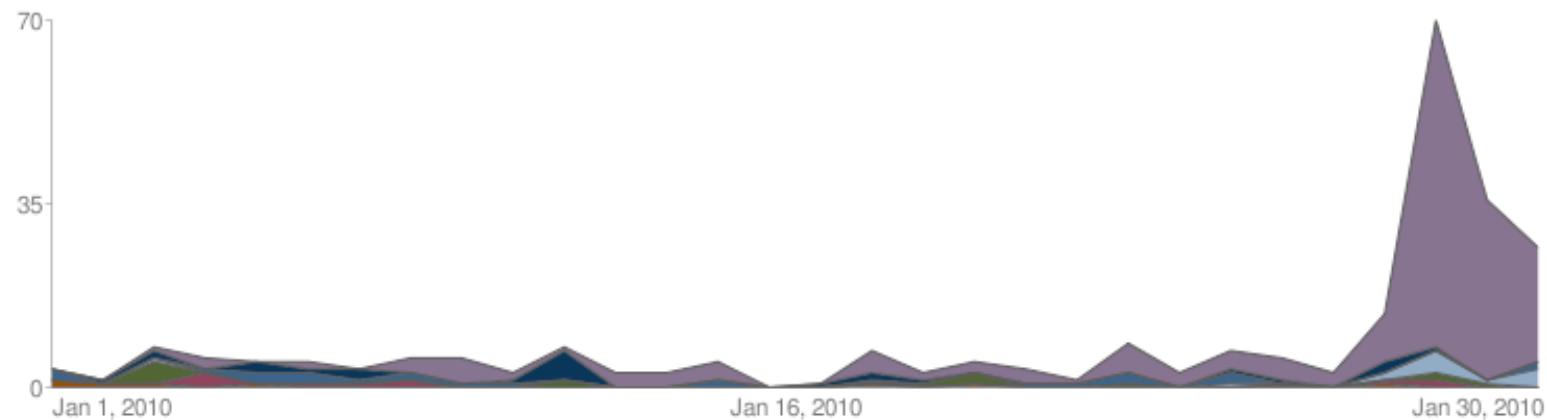
- Embedded player (CIRM, grantee, elsewhere)



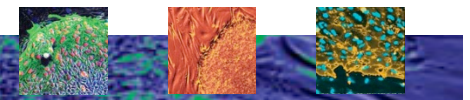
YouTube – How viewers find us

Discovery How are people finding this video?

Share of each source Display as: ☒ Stacked chart ☐ Line chart



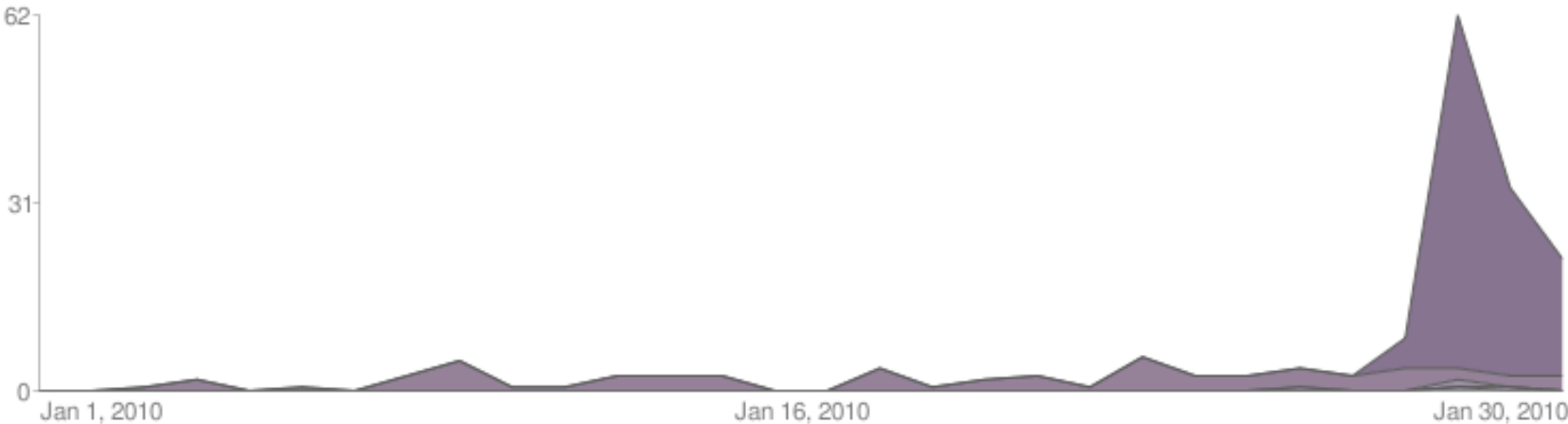
<input checked="" type="checkbox"/> Source of views	Views	% of total views
<input checked="" type="checkbox"/> Embedded player	180	67 <div></div>
<input checked="" type="checkbox"/> YouTube search	21	7.9 <div></div>
<input checked="" type="checkbox"/> Related videos	21	7.9 <div></div>
<input checked="" type="checkbox"/> YouTube other	12	4.5 <div></div>
<input checked="" type="checkbox"/> Google search	12	4.4 <div></div>
<input checked="" type="checkbox"/> External links	11	4.1 <div></div>
<input checked="" type="checkbox"/> Viral / other (?)	6	2.2 <div></div>
<input checked="" type="checkbox"/> Mobile devices	2	0.75 <div></div>



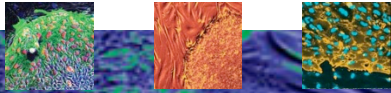
YouTube – How viewers find us

Discovery External websites that embed this video

Share of embedded player Display as: ☒ Stacked chart ☐ Line chart



<input checked="" type="checkbox"/> Embedded player Show all discovery		Views	67.0% of total
<input checked="" type="checkbox"/>	www.cienciahoje.pt	113	42 <div></div>
<input checked="" type="checkbox"/>	www.cirm.ca.gov	63	23 <div></div>
<input checked="" type="checkbox"/>	www.doarvida.blogspot.com	1	0.37 <div></div>
<input checked="" type="checkbox"/>	cirm.ca.gov	1	0.37 <div></div>
<input checked="" type="checkbox"/>	infodiasms.blogspot.com	1	0.37 <div></div>
<input checked="" type="checkbox"/>	doarvida.blogspot.com	1	0.37 <div></div>



YouTube – How viewers find us

Segunda-feira, 1 de Fevereiro de 2010

CiênciaHoje®

Director: Jorge Massada
Subdirectores: Raquel Soares e Tiago Fleming Outeiro

As Ciências

A Revista

Dossiers

Fóruns

Encartes

Classificados

Agenda da Ciência

A pastilha que mudou o Mundo!

Pílula faz 50 anos

2010-02-01

Por Jorge Massada

SHARE



Foi em 23 de Junho de 1960 que a Food and Drug Administration (FDA) autorizou a comercialização da pílula anticoncepcional,

após alguns anos de experiências, nomeadamente em mulheres porto-riquenhas. Talvez este organismo americano não soubesse mas acabava de colocar em marcha aquela que seria, provavelmente, a maior revolução de costumes do século passado. Ciência Hoje assinala os 50 anos com um dossier/ fórum.

Governo cria conta poupança para bebés - Foi hoje aprovada em conselho de ministros uma das bandeiras socialistas para esta legislatura: a conta-poupança para recém-nascidos com um depósito inicial de 200 euros

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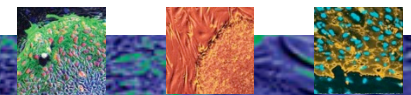
Junte-se a nós



Parceiros de Excelência



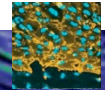
Inscrições: Até 31 de Janeiro de 2010



YouTube – Going forward



- Provide more disease-specific videos
 - These are our most popular videos
 - Parkinson's Disease is the most popular with ~10,000 views to date
- Increase daily views while maintaining high attention ratings



CIRMResearch.blogspot.com



Goal: To highlight progress by CIRM grantees

The screenshot shows a blog post titled "Visual Function Rescued in Rats Using Cells derived from iPS Cells" dated Wednesday, January 27, 2010. The post is from the "CIRM Research Results" section, which provides summaries of publications based on funding by the California Institute for Regenerative Medicine. The article discusses the excitement surrounding induced pluripotent stem (iPS) cells and their potential to create personalized replacement cells for patients. It mentions a study by a team at UC Santa Barbara and University College London, which showed that RPE cells grown from iPS cells and inserted into the retina prior to photoreceptor death were able to rescue the receptors and the rats retained vision. A press release from UCSB quoted Sherry Hikita, an author on the paper, saying: "Although much work remains to be done, we believe our results underscore the potential for stem-cell based therapies in the treatment of age-related macular degeneration." The post also mentions that the team saw a difference between the iPS derived RPE cells and embryonic stem cell-derived RPE cells used in earlier experiments. The right sidebar contains navigation links: "FOR RESEARCHERS", "FOR THE PUBLIC", "CIRM OPERATIONS", and "ABOUT CIRM". Below these links is an "About CIRM" section with a logo and text describing the organization's mission and funding.

CALIFORNIA INSTITUTE FOR
CIRM
REGENERATIVE MEDICINE

CIRM Research Results

Summaries of publications based on funding by the California Institute for Regenerative Medicine

WEDNESDAY, JANUARY 27, 2010

Visual Function Rescued in Rats Using Cells derived from iPS Cells

Induced pluripotent stem (iPS) cells have created excitement and head scratching ever since they were first created a little over two years ago. The excitement arises from their creation through reprogramming adult cells by manipulating their gene function, which does not require a human embryo and could potentially give a patient personalized replacement cells. But determining just how identical they are to embryonic stem cells in function has caused much consternation.

Now, a team at UC Santa Barbara and University College London has provided some pro and con information on the functionality question. Working in a rat model for age-related macular degeneration in which defects in retinal pigmented epithelial (RPE) cells lead to death of photoreceptors, they showed that RPE cells grown from iPS cells inserted into the retina prior to photoreceptor death were able to rescue the receptors and the rats retained vision.

A [press release](#) from UCSB quoted Sherry Hikita, an author on the paper saying:

"Although much work remains to be done, we believe our results underscore the potential for stem-cell based therapies in the treatment of age-related macular degeneration."

However, the team also saw a difference between the iPS derived RPE cells and embryonic stem cell-derived RPE cells used in earlier experiments. The ESC-derived cells survived after transplant long-term

FOR RESEARCHERS

FOR THE PUBLIC

CIRM OPERATIONS

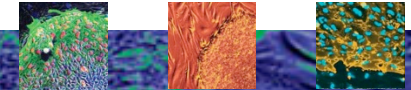
ABOUT CIRM

About CIRM

C CIRM

The California Institute for Regenerative Medicine funds stem cell research at research institutions and companies throughout California. The organization was established in 2004 with the passage of Proposition 71, which provided \$3 billion in funding. Our grants support research with embryonic, adult and reprogrammed (iPS) stem cells, all with the goal of bringing new medical therapies to the people of California and the world.

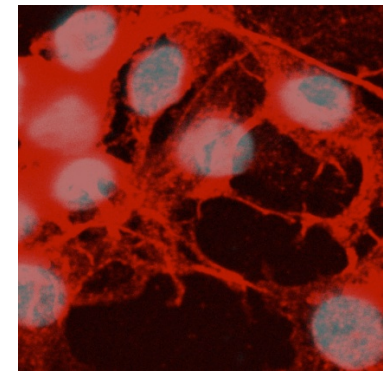
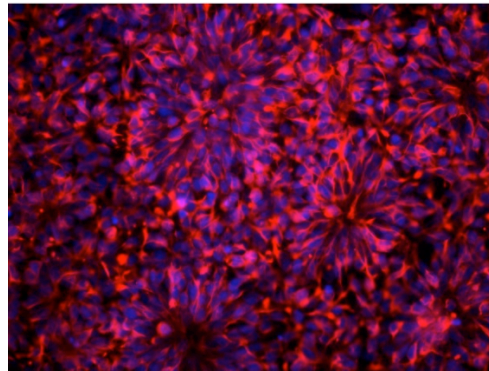
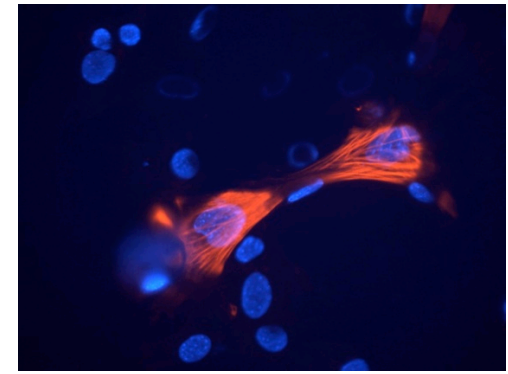
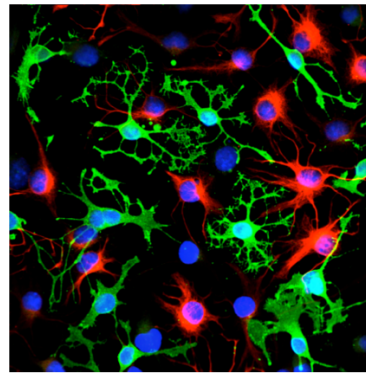
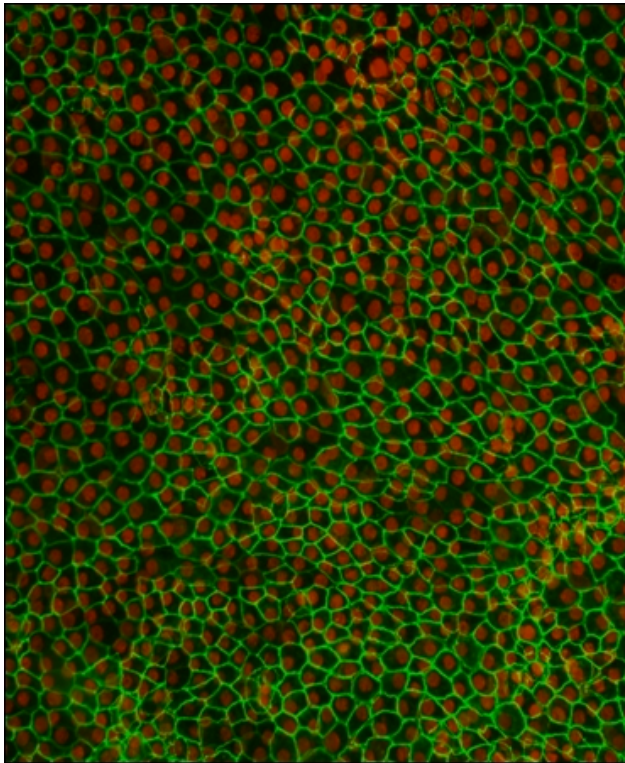
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Flickr – www.flickr.com/photos/cirm



Goal: To show the beauty of stem cell research and provide images to news outlets



Monthly Digest



Goal: To update interested parties about CIRM's activities

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The State Stem Cell Agency



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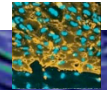
See images

CIRM January Digest



The CIRM review panel that in April 2008 recommended providing over \$270 million to construct 12 major stem cell research facilities in California met on January 15th to review the status of these projects and found that all were moving forward, with 11 having construction well underway.

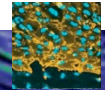
An independent review of the impact of this investment for the state economy last year by The Analysis Group suggested that the projects would create 13,000 job years of employment and \$100 million in tax revenue between 2008 and 2011.

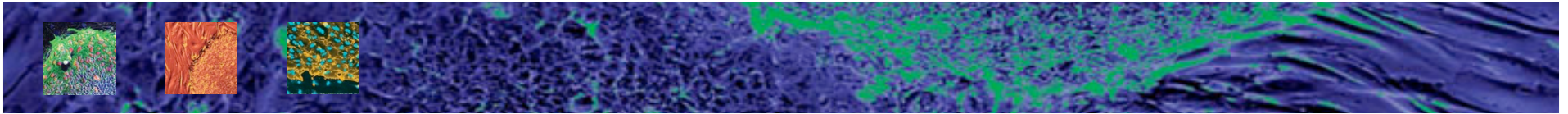


Conclusion



- Put information about CIRM where people can find it
- Dispersed information drives people to our site
- More people learn about the value of CIRM and about advances by our grantees





The state stem cell agency

2009-10 Budget Allocation and Expenditure Report

Posted Through December 31, 2009

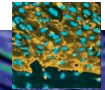
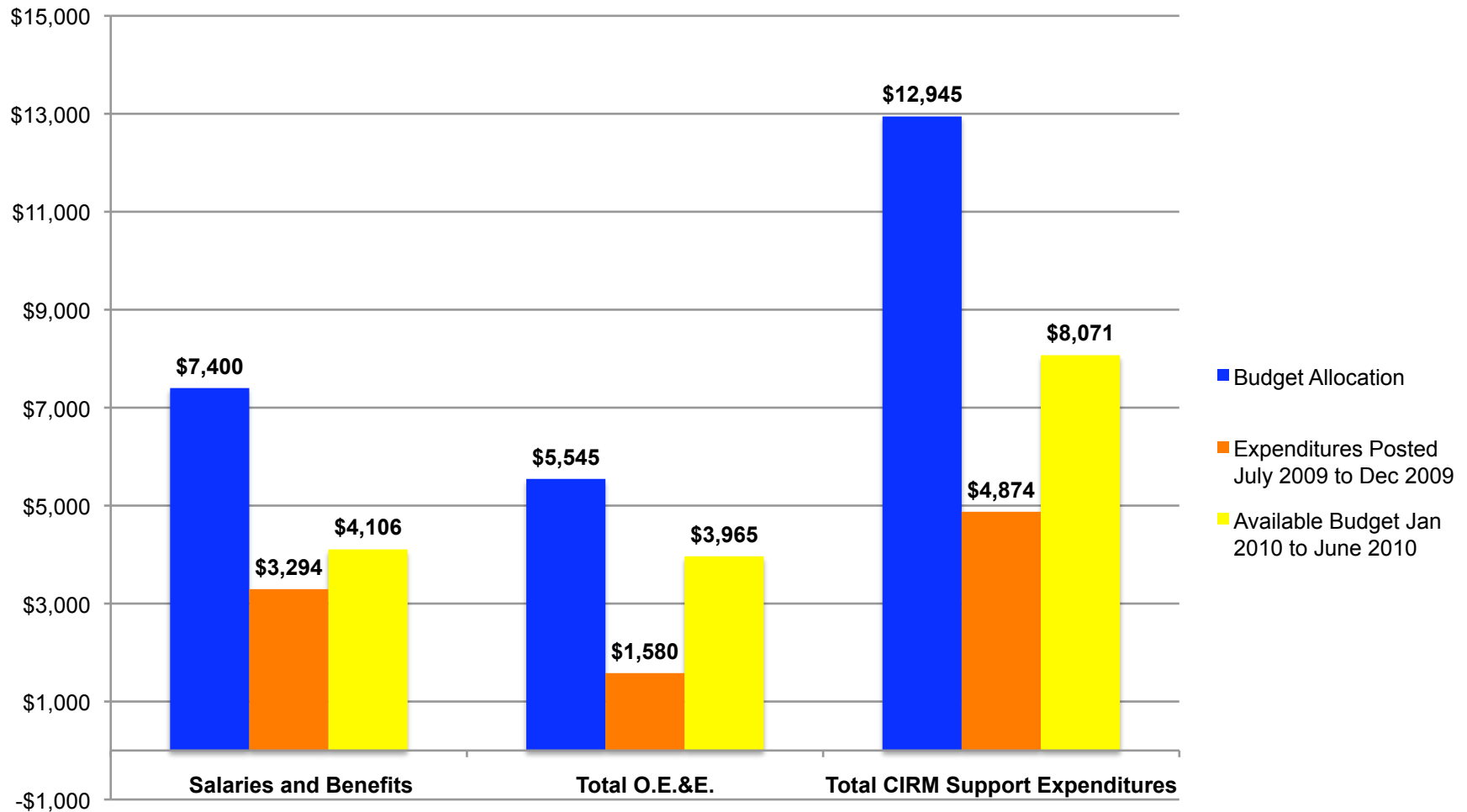
***Chila Silva-Martin,
Financial Services Officer***

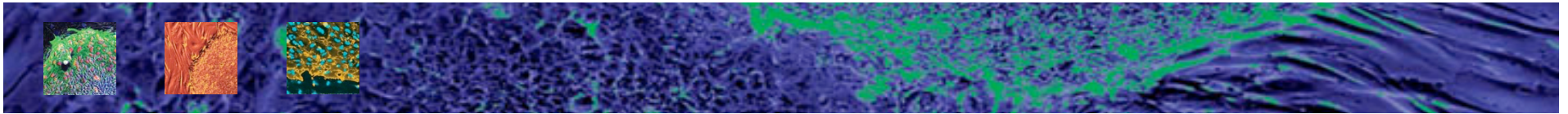
February 3-4, 2010 ICOC Board Meeting



Fiscal Year 2009-10

Expenditures Posted Through December 2009





The state stem cell agency

CIRM Operations Summary ICOC - February 2010

**John Robson, PhD
VP Operations**



Financial Projections

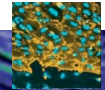
CIRM Funding Financial Projections to 6/30/11



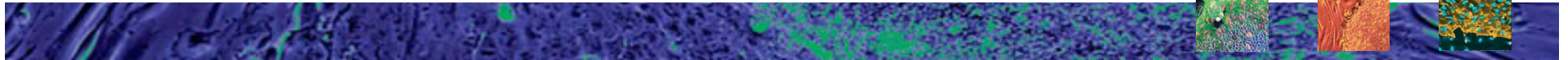
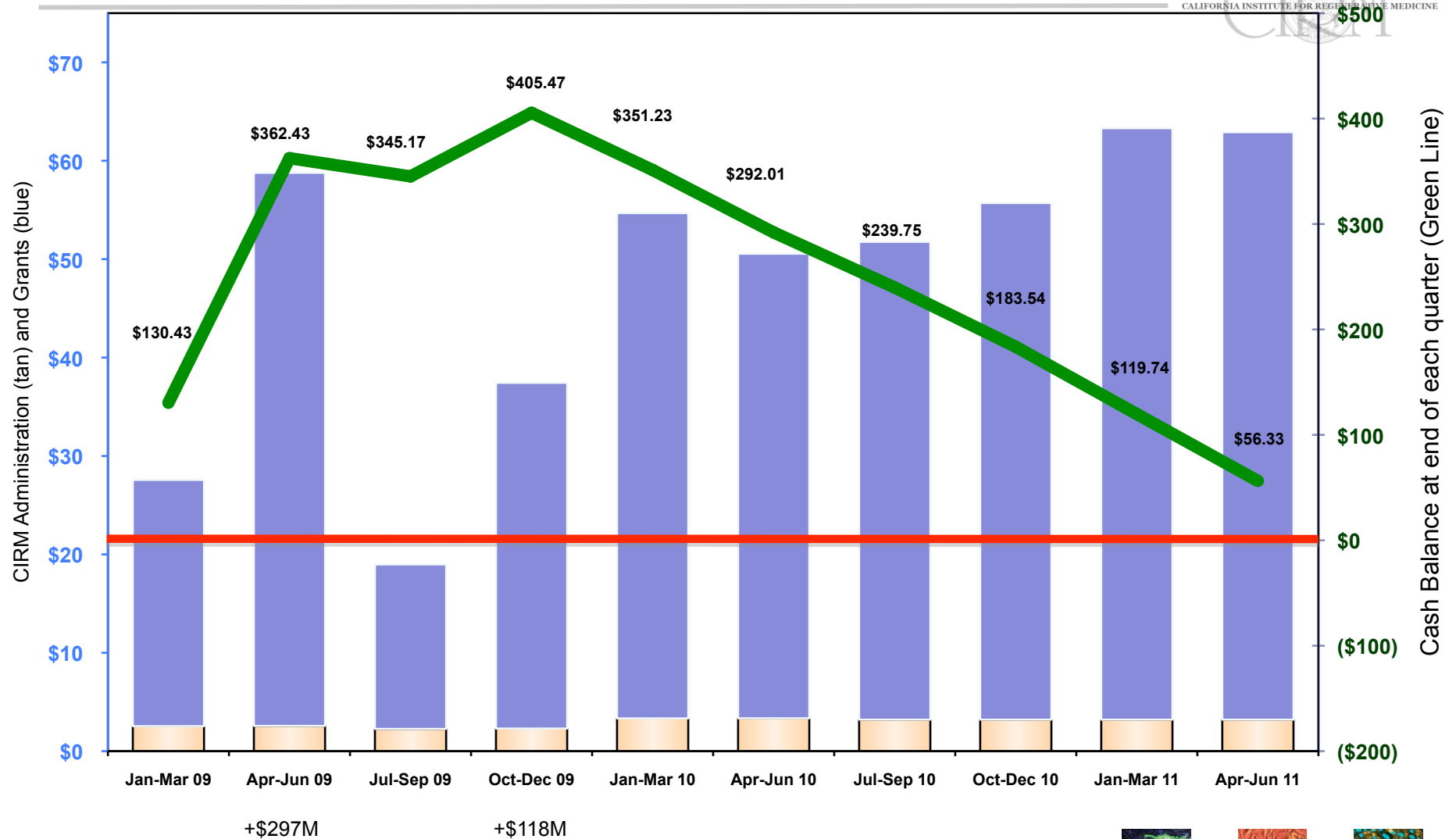
**Includes: All programs approved by the
ICOC**

Programs with ICOC concept approval:

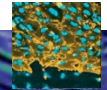
- Basic Biology II - \$30 million
- Immunology - \$30 million
- Research Leadership Awards - \$44 million
- Early Translation 2 – \$80 million



CIRM Funding Financial Projections to 6/30/11



Major Facilities



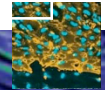
Status Report

Major Facilities Projects



8 of 12 projects are on schedule:

<u>Grantee Institution</u>	<u>Completion</u>	<u>CIRM Award</u>
Stanford University	July 2010	\$43,578,000
UC San Francisco	June 2010	\$34,862,400
UC Irvine	July 2010	\$27,158,000
USC	July 2010	\$26,972,500
UC Davis	May 2010	\$20,082,400
UC Los Angeles	May 2010	\$19,854,900
UC Berkeley	June 2010	\$20,183,500
UC Santa Barbara	March 2010	\$3,205,800



Stanford University Lorry I. Lokey Stem Cell Research Building



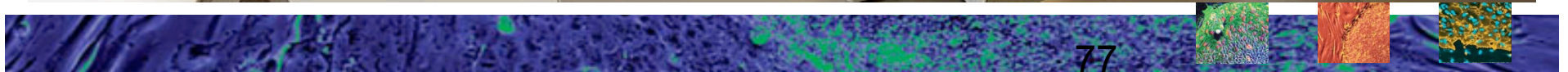
UC Davis Institute for Regenerative Cures

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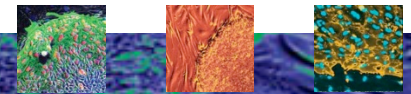
Status Report

Major Facilities Projects



3 of 12 projects are delayed 1 year:

<u>Grantee Institution</u>	<u>Completion</u>	<u>CIIRM Award</u>
San Diego Consortium	June 2011	\$43,000,000
UC Santa Cruz	Nov. 2011	\$7,191,950
UC Merced	Sept. 2011	\$4,359,480



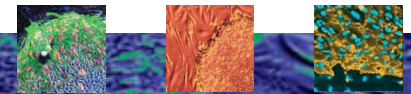
Status Report

Major Facilities Projects



1 project is about to begin construction:

<u>Grantee Institution</u>	<u>Completion</u>	<u>CIRM Award</u>
Buck Institute	March 2012	\$20,500,000

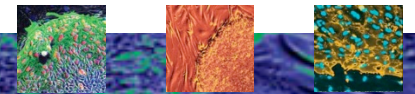


Major Facilities Projects

2010



- **Planning programmatic site visits to all projects that received up-front funding.**
- **Planning technical site visits for other projects.**
- **Independent audits are due within 120 days after completion.**



Economic Impact

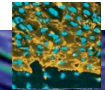


Economic Impact



Develop model to evaluate the economic impact of CIRM's investments including:

- Job creation
- Tax revenues
- Funds leveraged
- Health care savings



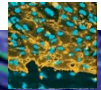
Economic Impact



Initial “test study” of Polycythemia Vera and Primary Myelofibrosis

Draft/model will be critiqued by external experts including:

Health Economists
Medical Specialists



External Review



External Review

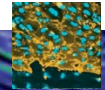


2006 Strategic Plan calls for a review after 3 years by a “blue-ribbon” committee of:

- Scientists
- Clinicians
- Ethicists
- Patient Advocates

Goals of the review are to:

- Measure progress against stated commitments
- Evaluate strategic principles
- Make recommendations for changes



External Review



Building a list of reviewers (5-7):

- Internationally known
- Mostly from outside California

Developing time-line and procedures

Modeling long-range projection for entire \$3 billion authorization

